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GUEST EDITORIAL

Post War Medical Education

AS WE strive to solve our professional problems in the present reconstruction period, we are forcibly reminded that wars have always had a profound influence upon the development of medical science, often advancing and often impeding its progress. The battlefield has been a training ground for traumatic surgeons and the army camp for the study of public health. At times, wars have brought undying fame to military surgeons as well as to military leaders. Ambroise Paré (1510-90), a rustic barber surgeon's apprentice from the French provinces, joined the armed forces after only three years of practical experience as a resident "dresser" in the Hotel Dieu. For thirty years thereafter he served under four kings of France in many strenuous campaigns. Through keen observation, shrewd judgment, and enormous energy, he met the problems of a military doctor with honor and success and finally gained formal recognition from the French medical profession. Ultimately he became the most celebrated and most productive surgeon of the Renaissance. He has rightly been called "one of the master surgeons of history", and "the father of modern surgery".

During our American Revolution, our first medical schools, very recently established, were forced to close. After the war, however, they grew with renewed vigor as our own enthusiastic young students trained in the institutions of higher medical learning of France, Holland, England, and Scotland, returned in increasing numbers to reestablish our medical schools and to personally guide and inspire our younger men. During the remainder of the eighteenth and the first half of the nineteenth century our medical schools and hospitals increased rapidly in numbers and importance. In these pioneer years, however, coordinated effort for scientific advancement was difficult because of our relatively small and widely scattered population. In spite of many handicaps, however, numerous outstanding individual contributions to medical science were made by such men as Ephraim McDowell, Daniel Drake, William Beaumont, Oliver Wendell Holmes, Samuel D. Gross, and a great many others.

Immediately following the war between the states, the progress of medical education in our country was at an extremely low ebb. The year 1870, nevertheless, marks the beginning of a new and more modern era in America medical education. We made more rapid progress after that date and by 1890 medical schools of a higher type, comparable to the best of those abroad, had been established in some "five or six" of our endowed universities. These schools were the nucleus of our present system of advanced medical training. They supplied the well trained teachers and the medical leaders with a full understanding of the requirements of modern higher medical education whose help and inspiration were so much needed at that critical period.

In 1910 the Flexner report appeared and our Council on Medical Education published its first classification of medical schools and its standards for an acceptable school. The events which quickly followed resulted in the elimination of our less

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efficient institutions, brought to an end the era of the proprietary medical schools, and cleared the way for the rapid advancement in scientific medicine which came after World War I.

A number of elements contributed greatly to the rapid progress of our profession in the important years which followed 1918. The first of these was our industrial revolution which, starting early in the nineteenth century, reached its culmination at the turn of the twentieth century and furnished both the inspiration and the financial support for many forms of social improvement, including medical education. A second element was the vitalizing influences of scientific research which permeated every phase of American life and was nowhere more intensely active than in American medicine. Still a third element was the rapid growth of specialism in our profession which enlisted the enthusiastic efforts of large numbers of well trained minds in the intensive study of every division of medicine and yielded a rich harvest of technological advancements in medical science and gratifying improvements in clinical practice. Specialism in modern American medicine, while not without many faults and many weaknesses, has, nevertheless, been a very important element in our medical progress.

During World War II there was intense activity in the study of basic educational methods in almost all of our colleges and universities and many new changes have been made in their post-war curriculums. Our medical educators have likewise been deeply interested in improving and modernizing our medical school curriculum and in developing and extending our system of graduate training in all divisions of medicine. The growing magnitude of the great mass of medical knowledge is making necessary an earnest search for ways and means by which our students may procure a well rounded and properly integrated and correlated professional education during their medical school years.

Formerly the study of anatomy, physiology, biochemistry, and pharmacology occupied most of the student's time in the first two years in medicine. These subjects were taught as independent branches of medical science and too little attention was given to their practical application. At present, less time is devoted to these basic subjects in the preclinical years and more time later in the curriculum to their application in clinical medicine and surgery. Where possible, this phase of the instruction is now imparted by teachers experienced in clinical work rather than by technical specialists in these branches.

Some professional medical educators believe that our students would receive a better training for medical practice if, instead of presenting each major division of medicine as a separate, independent branch of medical science, we were to treat the whole field of medicine as a composite whole, fitting each branch of medicine or each specialty into the picture as it may be useful in the overall understanding of clinical medicine and surgery. They would accomplish this by having the entire four years of the medical school curriculum made up of well integrated and correlated courses, with each course carefully planned and presented by the combined efforts of teachers from all departments of the school.

Gradually in recent years clinical instruction has been started earlier in the medical school curriculum. The contact between teacher and student has become more intimate. The old lecture-ship system is slowly being replaced by a plan in which the student is an important and a responsible member of a small group in charge of the study and treatment of clinical cases. Visual methods, even including television, are also rapidly assuming a more important place in our system of education.

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The rapid progress in modern scientific medicine with the resulting large accumulation of practical clinical knowledge has been chiefly responsible for the recent developments in medical education. Changes have been made not only that we might continue to make further advancement through scientific research but also that we might make fuller use of our new knowledge in the treatment of clinical cases. Let us hope that these changes will be helpful in the medical school curriculum and in the graduate training program for the recognized specialities but most of all in the furtherance of more active efforts for the better training of the general practitioner who seems to be the "forgotten man" in this age of specialism.

As the medical school curriculum has become more complicated, it has been necessary for our students to acquire a greater part of their practical clinical experience and their more advanced medical and surgical training during their intern and residency years. At the same time it has become increasingly difficult for our medical schools and our university hospitals to provide the large amount of clinical material and the practical experience necessary for the training of the rapidly increasing number of men who must have this advanced type of medical education. Our independent hospitals, widely scattered throughout our country, would alone seem to have the facilities to undertake this added responsibility. They have, for years, performed a part of this task with varying degrees of efficiency and it now appears necessary that they assume a greater share of this work. This is an important challenge to our independent hospitals and to their staffs. It has always been the custom of our profession, however, to aid in the training of our younger men. We have each, in our turn, received helpful instruction from our elders. This obligation to our youth is a time honored tradition among medical men. It has even come down to us through more than twenty-three centuries in the oath of Hypocrates. It is a tradition, moreover, which we must not neglect at this time if the progress of higher medical education is to be maintained in our generation and if we are to meet the insistent and growing demand of our people for more and better medical care.

In comparison with the tribulations of the medical professions in other lands we in America have suffered little during the recent war. In fact, in many ways, we have made definite advancements. This should make us keenly aware of our responsibility in maintaining the progress of medicine in this post-war era. Our medical educational institutions and our profession are well developed and with good leadership and the backing of the American people will be able to meet the task before us. Our younger medical men have shown their worth by rendering efficient and honorable service to their country in the armed forces and are now eagerly and intelligently preparing themselves for leadership in our profession in their generation. Certainly after no war in our history has the stage been more favorably set for the rapid advancement of medical science, medical education, and medical practice in America.

LEWIS F. SMEAD, M.D.*
Toledo, Ohio.

EDITOR'S NOTE: Dr. Smead is a past President of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, and is a keen student of medical history.

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TREATMENT OF BURNS*

CHARLES HAMILTON LUPTON, M.D., F.A.C.S.,
Norfolk, Virginia.

While the management and treatment of patients with severe burns still remains one of the most controversial subjects in the entire field of surgery, nevertheless, it can be safely said that there has been more progress in both the local and general treatment of burns during the past decade than there has been in any previous decade in history. World War II was an important factor in stimulating further investigation and research in the management of burns.

The mortality rate from burns is still far too high and a discussion of burns should be presented to the profession more often.

In the local treatment of burns there have been two significant accomplishments in the past few years. First and most outstanding: The occlusive compression treatment of burns as developed by Allen and Koch of Chicago, and Siler and associates of Cincinnati; second: Sulfanilamide ointment as developed by E. I. Evans and associates at the Medical College of Virginia, and certain other sulfonamide ointments with fatty bases so that the sulfonamide is slowly absorbed. In the general treatment of burns, the greatest progress has been in obtaining a better knowledge of the physiological and pathological changes which take place, combating hemoconcentration with plasma, giving transfusions of blood, administering adequate electrolytes and fluids before irreversible metabolic changes take place; giving a high protein, high vitamin diet, and performing split-thickness skin grafts early.

Severe burns are surgical emergencies, and they require the services of a team trained in the treatment of burns in order to obtain the best results. Severe burns often present the most difficult of surgical problems, particularly from the standpoint of general treatment. In severe burns there are many physiological and pathological changes taking place, and although there are certain methods of estimating the fluid requirements, it is necessary to individualize each patient in regard to the general treatment.

By severe burns we mean those patients who have a considerable part of the body surface burned. Of course, there are other factors in addition to the extent of the body surface burned which may profoundly influence the seriousness of the condition, namely, *The depth of the burn, the age of the patient, the general condition and nutrition of the patient, the time elapsing between the burn and the institution of adequate treatment and the causes of the burns. Usually any patient with as much as 15-20 per cent of the body surface involved with second or third degree burns presents a rather serious surgical problem. This is particularly true if the patient is debilitated and all four extremities are burned in locations where intravenous fluids are given.*

Berkow's method of determining the extent of the body surface burned is a satisfactory method of approximating the extent of the burn, but where a more exact percentage is desired and particularly in children, Lund and Browder's modification† of Berkow's method would be preferable.

Lund and Browder's modification of Berkow's method for determining the extent of the body surface burned in adults is as follows:

Head	7
Neck	2
	9
Anterior trunk	13
Posterior trunk	13
Buttocks	5
Genitalia	1
	32
Upper arms	8
Forearms	6
Hands	5
	19
Thighs	19
Legs	14
Feet	7
	40

The treatment of burns is divided into the Local Treatment and the General Treatment.

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Read before the Seaboard Medical Association of Virginia and North Carolina, December 3-5, 1946.

†Lund, Charles C., and Browder, Newton C., *S. G. & O.*, October, 1944, vol. 79, No. 4, pp. 352-358.

The Local Treatment of Burns is divided as follows:

1. The Agents and Dressings applied to the burned areas.
2. The Early Plastic Treatment.
3. The Late Plastic Treatment.

The General Treatment of Burns is divided as follows:

1. Early General Treatment, during shock or the potential shock period.
2. Intermediate General Treatment.
3. Late General Treatment.

LOCAL TREATMENT

Whether debridement will be carried out, or not, will depend to a great extent upon the local treatment to be applied and upon the general condition of the patient. When modified M.C.V. ointment (or M.C.V. ointment) and compression are used locally, the need for debridement is practically eliminated. On the other hand, if vaseline gauze and compression are used locally and if the patient's general condition justifies it, then limited debridement may be indicated, as infection is more likely to occur with that method of local treatment.

Most surgeons of experience in the treatment of burns will now agree that extensive debridement in severe burns is not only unnecessary, but it may be extremely dangerous. Extensive debridement may be an important factor in producing shock, or by further increasing shock, if it is already present. The belief that extensive debridement is necessary in these early burns in order to avoid severe infections has been proven to be incorrect, if the local method to be described has been employed. However, *in neglected second degree burns and in extensive third degree burns, infection may be a very real problem.* If we were treating only the local wound, then debridement under anesthesia in certain cases would be the proper surgical procedure. In severe burns we are dealing with critically ill patients, and anything that would be an important factor in producing shock or delay unnecessarily the treatment to correct the abnormal physiology, would many times offset any benefits that might result from debridement. The practice of giving these critically ill patients an anesthetic is to be condemned. We do not use soap and water for cleansing these wounds. If the general condition of the patient is satisfactory, we do excise partly detached and devitalized tissue, and gently remove gross loose dirt with cotton balls soaked in saline. *We never open blebs at the time of the original dressing. It is most important to treat these patients as surgical emergencies, promptly carrying out the local and early general treatments simultaneously.* In severe burns if there is delay in carrying out the local treatment, the patient may become shocked and the longer the delay, the greater the possibility of infection. If there is delay in carrying out the early general treatment shock may rapidly ensue, or if already present it may progress until irreversible changes take place.

The surgeons and nurses engaged in carrying out these treatments should wear caps, masks, sterile gloves and gowns, and *they should observe a sterile technique throughout the procedures.* Proper masking of the patient, and those engaged in carrying out the local treatments is most important. *If these principles are not observed, infections will be increased.*

A modification of M.C.V. ointment (or M.C.V. ointment) with adequate occlusive pressure dressing is the local treatment of choice. M.C.V. ointment is somewhat soft in this climate; therefore, it has been modified simply to make it of greater consistency with the therapeutic value of the ointment remaining essentially the same.

Modified M.C.V. ointment is as follows:

Sulfanilamide (finely powdered)	6%
Peanut Oil	8%
Cold Cream	43%
Lanolin	43%

NOTE: Beeswax or white wax ¼—1% (replacing an equivalent amount of cold cream) is added in warm weather or whenever the ointment is to be kept in a warm place.

Using an aseptic technique, the local treatment is applied as follows:

1. Modified M.C.V. ointment (or M.C.V. ointment) is thickly applied to the entire burned area and to an inch or more of the adjacent unburned skin. Where there are large areas of third degree burns with considerable exudate, the ointment does not adhere satisfactorily; therefore, for those areas it is advisable to have the ointment already prepared on wide pieces of gauze in order to expedite the dressings.
2. Apply a thick layer of "fluffs" or of "ripple" gauze.

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3. Apply one or two layers of large and thick combines (Curity).
4. Apply a wide elastic bandage.

We frequently use a stockinet in addition to the elastic bandage. When the patient is uncooperative, there is often difficulty in keeping the dressing on the body, in which event we may also use a many-tailed binder.

To obtain adequate compression without constriction or tourniquet effect, it is necessary to have a thick and "fluffy" dressing. *Constriction or tourniquet effect must be avoided.* As has been pointed out by many authors previously, in bandaging an extremity the pressure must be greater distally.

Frequent dressings should be avoided. Frequent dressings mean delayed healing and greater possibility of infection. Infection may convert a second degree burn into a third degree burn.

This type of dressing with modified M.C.V. ointment (or M.C.V. ointment) has a quick analgesic effect. Burned patients treated with this method remain unusually comfortable, and the need for sedatives and opiates is very much reduced.

There is slow absorption of the sulfanilamide from the ointment and the blood concentration even in very extensive burns remains very low; therefore, it is not necessary to determine sulfanilamide blood levels. On the other hand, sulfonamides should not be given by other routes. It is often surprising how much healing will have taken place at the time of the first change of dressing, whereas, with many other methods of local treatment, it is not uncommon to find areas which originally were of second degree, converted into third degree burns. As is well known, the deeper the burn the greater the possibility of infection. *It is not advisable to use this ointment longer than three weeks.* If for any reason the preparation of the deep burns for skin grafting can not be started at that time, some other method of local treatment without sulfonamides should be substituted. In late burns which are badly infected, we do not necessarily advocate this local method of treatment; in fact, we know of no method which is satisfactory in those cases. However, we have used this method in a number of late and badly infected cases and the results have been much better than anticipated, but those cases should be individualized.

Many surgeons believe that vaseline gauze with compression, and sulfonamides orally or intravenously will accomplish the same results as the method just described, because the sulfonamide concentration in the plasma in the burn blebs is about the same as in the blood. There are two reasons why modified M.C.V. ointment (or M.C.V. ointment) with compression will give better results. First, an important fact, the ointment places the sulfanilamide in direct contact with devitalized tissues that can not be reached by the blood. This fact, we believe, accounts for the low incidence of infections with this local method of treatment. Second, the dressing can be removed without producing bleeding of importance from the burned surface, as this ointment leaves a thin film adherent to the burned area. It is difficult to remove vaseline gauze from a deep burn without producing bleeding and therefore damage to the burned tissue.

To use modified M.C.V. ointment (or M.C.V. ointment) with compression is to be impressed with its efficacy.

2. The Early Plastic Treatment of Burns. Deep burns should be grafted just as soon as the burned area can be gotten into a healthy condition. This often takes as long as two or three weeks, and may take longer, due to the slow separation of the slough. We, personally, prefer dermatome split-thickness (thin) grafts of about 0.010 or 0.012 of an inch. The thin grafts take more readily than the thicker ones. Under the most favorable conditions, about 90-95 per cent of split-thickness grafts should take. Pinch grafts are occasionally indicated in extensive burns but we usually prefer not to use them if split thickness grafts can be obtained. The most important principle is to get the granulating surface covered, creating a closed wound with its beneficial effects and thereby avoid deep scars and contractures. *Early and proper splinting of joints is of decided importance in preventing contractures.* Each surgeon usually has his own particular method of attaching the graft and of applying a dressing to it, but regardless of his method, there are two fundamentals that should be observed: first, the graft should not be applied under tension; second, the graft should be securely attached and then dressed so that it will remain still.

3. The Late Plastic Treatment of Burns. The late plastic treatment of burns is concerned with the correction of contractures, skin defects and deformities, or perhaps with the removing of thin grafts which were applied simply to cover a granu-

lating surface. Therefore, grafts used here must be considerably thicker than would be used in the early plastic treatment of burns. These grafts must be of sufficient thickness not only to protect the underlying structures, but they should serve the functions of essentially normal skin. Ordinarily, we prefer split-thickness grafts of about 0.020 of an inch or slightly more in thickness. Occasionally we use pinch-grafts to cover small areas, but they have a limited field of usefulness. In the case of certain contractures and scars, the Z plastic and releasing incisions are extremely useful procedures. In some instances, a pedicle graft will be necessary to obtain satisfactory results. The fundamentals of securely attaching the graft, of keeping it still, and of not placing it under tension apply to the late plastic treatment of burns as they do to the early plastic treatment. After controlling oozing from the donor sites, the sites should be dressed the same as a burned area, with modified M.C.V. ointment (or M.C.V. ointment) and occlusive pressure dressings. *It is essential to keep the patient in a good nutritional state during all phases of plastic surgery; otherwise, failures are likely to result.*

GENERAL TREATMENT OF BURNS

1. *Early General Treatment of Burns. There must be no delay in carrying out the early general treatment.* It should be started within a few minutes after the patient reaches the Emergency Room, and carried out simultaneously with the local treatment. When these patients are first seen they complain of pains, are thirsty, and are shaking as though they were having a chill. The more severe cases are given morphia gr. ¼ on admission. Tetanus antitoxin is always given at the time of admission, and gas-gangrene antitoxin is also given to some cases depending upon the condition and depth of the burns.

These patients are carefully observed for signs and symptoms of impending shock before the blood pressure begins to fall. The blood pressure and pulse are recorded every half hour for the first 24 hours or until the danger of shock has passed.

When laboratory facilities and personnel are adequate, blood should be collected immediately for determination of *blood volume,* the hematocrit, hemoglobin, R. B. C., sp. gr. of the blood and plasma, plasma proteins, blood chlorides and carbon dioxide combining power of the blood. In the most serious cases these laboratory procedures and urinalysis should be repeated one or more times daily during the first 48-72 hours in order to satisfactorily carry out the fluid therapy. The Rh factor should be determined before repeated transfusions of blood are given. Other indicated laboratory procedures are N.P.N., prothrombin level and icterus index.

The method of local treatment which has been described can be carried out with minimal laboratory procedures. *When laboratory facilities and personnel are very limited, as they frequently are, and particularly in the smaller hospitals, the hematocrit, hemoglobin, R.B.C., plasma proteins and the urinary output in addition to the clinical condition of the patient can serve as a good guide to fluid therapy.*

Plasma is indicated in the treatment of all severe burns. It serves its main usefulness during the first 72 hours, provided it is given early and in adequate amounts. There are a number of different methods for determining the required amount of plasma, but either of the following methods will usually be found satisfactory:

1. Give 50-75 c.c. of plasma for each per cent of the body surface involved in a blistering or deep burn. (This method is usually preferred, especially if the patient is seen early, as the hematocrit may still be normal.)
2. Give 100 c.c. of plasma for each point the hematocrit exceeds the normal of 45 (Harkins).

The amount of plasma to be given during the second 24 hours will usually be considerably less than that given the first 24 hours, often about one-third or one-half. During the third 24 hours, the amount of plasma will usually be about 25 per cent of that given during the first 24 hours, provided it is still indicated. The amount of plasma should be varied according to the clinical condition of the patient, the hematocrit and other laboratory findings.

In all severe burns, plasma should be started within a few minutes after the patient reaches the Emergency Room, performing phlebotomy if necessary. In cases of acute collapse, phlebotomy (using the long saphenous vein) even as high as the fossa ovalis may be necessary. Some prefer femoral venipuncture instead. *In the presence of shock, plasma must be given rapidly. Do not wait until the blood pressure begins to fall before giving plasma and instituting adequate general treatment.* Even if the patients do not present symptoms of shock when

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first seen, the surgeon of experience in the treatment of these cases, and with a knowledge of the changing physiology that is taking place, will realize that they are potential cases for shock, and he will act fast to carry out both the local and early general treatments. In order to avoid difficulties in the management of these cases, it is necessary to comprehend the seriousness of the condition and understand that profound physiological changes are taking place before the blood pressure begins to fall.

SHOCK

Primary shock occurs from vasomotor reaction, caused by pains, injury, etc. It develops promptly, while true shock or secondary shock develops slowly. In severe burns primary shock may merge into secondary shock. There is little capillary permeability in primary shock as it does not produce hemoconcentration.

Secondary shock seldom occurs under 3 or 4 hours, except in severe injuries. In the early stages of severe burns there is often no fall of arterial blood pressure. Even before there is any fall of blood pressure or evidence of beginning circulatory failure, the incipient stage of true shock may be detected by slight hemoconcentration. The findings of hemoconcentration in the early stages will serve to differentiate this condition from either hemorrhage (with hemodilution) or from primary shock. Whenever possible, the best treatment of shock is prevention. Venous tourniquet tests may aid in detecting incipient traumatic shock.

Falling plasma proteins and progressive hemoconcentration usually indicate impending shock, even though the blood pressure may still be normal. If the urinary output is good during the early phase, shock is not so likely to be impending. Incipient shock is accompanied by a diminished urinary output.

Shock should be anticipated in any patient with as much as 25 per cent of the body surface involved in second or third degree burns. Therefore, immediate steps should be taken to prevent it. Shock may occur in children or debilitated individuals with as little as 10 per cent of the body surface involved in a deep burn. *Oxygen is indicated in the treatment of shock.*

Transfusions of blood are indicated in this early period, if the hematocrit is below 60, giving about one-half of the amount of plasma administered. Transfusions of blood may be given instead of plasma to prevent or combat shock, but at the same time electrolyte solutions should be given, preferably by mouth. The anemias, which frequently occur in the intermediate period, are not so common when blood transfusions are given in the early period. *Blood transfusions are always indicated in extensive and deep burns, particularly after the third day.* When anemia and hypoproteinemia occur, there should be no delay in giving frequent blood transfusions.

From a practical standpoint the urinary output is a good guide to the adequacy of the fluid intake. Enough fluids should be given to maintain a urinary output of at least 1500 c.c. daily. Too much emphasis can not be placed upon keeping a correct record of the intake and output. *Every effort should be made to encourage the patient to take an adequate amount of fluids and electrolytes by mouth.* In those cases when this can not be accomplished, the fluids and electrolytes could be given through a duodenal tube, provided there is no vomiting or other contraindications. When vomiting is present, electrolyte solutions should be given intravenously.

If the patient is able to take a diet during this early period, it should be soft and consist of a high caloric, high protein (200 to 400 grams daily) diet, with adequate amounts of vitamins, particularly vitamin C and vitamin B complex. If the patient can not tolerate a diet of sufficient proteins, then amino-acids parenterally should be supplemented.

Penicillin probably plays a very important part in controlling infection. It is started early and continued until the temperature is essentially normal. However, before penicillin was available, we obtained good results with the method outlined.

Whenever cultures or smears from the burned area show organisms susceptible to streptomycin, it should be employed. From a limited experience streptomycin appears to be of definite value in infections due to pyocyaneus or proteus organisms.

While there are still divergent opinions regarding the value of adrenal cortex extracts in the treatment of burns, nevertheless, from the evidences of toxic atrophy of the adrenals found at times on histo-pathological examination, it is believed that they may be of some value in severe cases.

2 and 3. *Intermediate and Late General Treatments.* The intermediate general treatment and the

late general treatment will be described together as they are the same, except there will often be more urgency in carrying the intermediate general treatment.

Enough emphasis has not been placed upon an adequate nutrition in the treatment of burns. Regardless of the local method employed, satisfactory healing will not be obtained if the patient continues in a poor state of nutrition.

The diet listed under the early general treatment should be continued during the intermediate and late periods. Most diets during these periods of healing are too low in proteins and vitamins. The patient should be encouraged to take the full diet, as that is the most effective way to maintain a satisfactory nutrition, along with frequent blood transfusions. *These are the periods during which blood transfusions are particularly indicated.* Liver parenterally, and iron are usually indicated in severe cases. During these stages at least weekly determinations of the hematocrit, plasma proteins, R.B.C., hemoglobin and blood chlorides will be necessary.

Toxemia. Toxemia is always a factor in very extensive deep burns and, while it does occur in the early stages before infection of consequence has had time to take place, it is always increased by infection. If the burn is not too deep and extensive, and the patient is seen early and treated adequately by the method outlined, then toxemia is not ordinarily a great factor. When patients are seen late, toxemia may be difficult to combat. When these patients develop high fever, it should be treated promptly and energetically, as they can not tolerate high fever for long periods.

CONCLUSIONS

1. Burns are surgical emergencies. Both the local and early general treatments should be carried out promptly and simultaneously.
2. Modified M.C.V. ointment (or M.C.V. ointment) with adequate occlusive pressure dressing is an excellent method of local treatment. These dressings should not be changed often. This method can be employed with minimal laboratory procedures.
3. *Debridement in severe and extensive burns is to be condemned.*
4. When second or third degree burns involve as much as 25 percent of the body surface, shock should be anticipated. Shock may develop with as little as 10 per cent of the body surface involved in deep burns, particularly in children or debilitated individuals.
5. Plasma is indicated in the treatment of all severe burns. It should be given early and in adequate amounts. It serves its main usefulness during the first 72 hours.
6. Transfusions of blood are indicated in the early treatment of burns, if the hematocrit is below 60. Frequent transfusions of blood are indicated in the late treatment of burns; they improve plasma proteins more rapidly than plasma.
7. Large quantities of electrolyte solutions are usually indicated, and whenever possible they should be given by mouth. Enough fluids should be given to maintain a urinary output of at least 1500 c.c. daily.
8. Burned patients should be given a high caloric, high protein (200 or more grams daily) diet with adequate vitamins until healing takes place and throughout the plastic surgical procedures.
9. Regardless of the local method employed, satisfactory healing will not be obtained if the patient continues in a poor state of nutrition.
10. Infections may be a serious problem in neglected second degree burns or in extensive third degree burns. When second degree burns are seen early and treated with the method outlined, infections are not ordinarily of major importance.
11. Deep burns should be grafted early, using dermatome split-thickness (thin) grafts whenever possible. When an adequate amount of split-thickness grafts can not be obtained, pinch grafts should be employed.
12. For the correction of contractures and deformities, use dermatome split-thickness (thick) grafts; Z plastics; releasing incisions and pedicle grafts as indicated.

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BIBLIOGRAPHY

Allen, Harvey, and Koch, Sumner L.: *S. G. & O.*, May, 1942, **74**: no. 5, 914-924.

Abbott, William E., Hirshfeld, John W., and Meyer, Frieda L., *S. G. & O.* **81**: no. 1, July, 1945.

XUM

Abbott, William E.; Pilling, Matthew A.; Griffin, Grace E.; Hirshfeld, John W., and Meyer, Frieda L.: *Annals of Surgery,* October, 1945, **122**: no. 4, 678-692.

Berman, J. K., Peterson, Lowell, and Butler, John: *S. G. & O.,* April, 1944, **78**: no. 4, 337-345.

Bornemeier, Walter C., and Parsons, Langdon: *S. G. & O.,* March, 1946, **82**: no. 3, 311-318.

Cannon, Bradford, and Cope, Oliver: *Annals of Surgery,* January, 1943, **117**: no. 1, 85-92.

Carr, Jesse C.: *S. G. & O.,* October, 1944, **79**: no. 4, 438-440.

Cope, Oliver: *New England Medical Journal,* July 22, 1943, **229**: 138-146.

Cope, Oliver: *Journal A.M.A.,* June 24, 1944, **125**: 536-543.

Cope, Oliver: *Jour. Missouri State Med. Asso.,* October, 1942, 310-314.

Cope, Oliver, and Moore, Francis D.: *Jour. Clinical Investigation* **23**: no. 2, 241-257, March, 1944.

Elman, Robert, and Lischer, Carl: *S. G. & O.,* April, 1944, **78**: no. 4, 346-349.

Elman, Robert; Merry, C. R.; Beguesse, Celsus, and Tisdale, Raphael: *S. G. & O.,* April, 1946, **83**: no. 2, 187-199.

Evans, E. I., and Alm, T. J.: *Virginia Medical Monthly,* July, 1944, **71**: no. 7, 342-350.

Evans, E. I., and Bigger, I. A.: *Annals of Surgery,* October, 1945, **122**: no. 4, 693-705.

Evans, E. I., Hoover, M. J., and James, G. Watson, III: *S. G. & O.,* March, 1945, **80**: no. 3, 297-302.

Evans, E. I., and Hoover, M. J.: *S. G. & O.,* July, 1943, **77**: no. 1, 367-375.

Findland, Maxwell; Davidson, Charles S., and Levenson, Stanley S.: *S. G. & O.,* February, 1946, **82**: no. 2, 151-173.

Fox, Charles L., Jr., and Keston, Albert: *S. G. & O.,* June, 1945, **80**: no. 6, 561-567.

Goodpaster, W. E.; Levenson, S. M.; Tagnon, H. J.; Lund, C. C., and Taylor, F. H. L.: *S. G. & O.,* June, 1946, **82**: no. 6, 652-670.

Harkins, Henry N.: *Physiological Reviews,* July, 1945, **25**: no. 3, 531-572.

Harkins, Henry N.: *Jour. S. C. M. A.,* February, 1945, **41**: no. 2.

Harkins, Henry N.: Scientific Exhibit, A.M.A., Chicago Session, 1944.

Harkins, Henry N., Boals, Robert T., and Brush, Brock: Proceedings Society Exp. Biology and Medicine, 1941, **47**: 14-16.

Harkins, Henry N.; Cope, Oliver; Evans, E. I.; Phillips, R. A., and Richards, Dickinson W.: *Jour. A.M.A.,* June 16, 1945, **128**: 475-479.

Jenkins, Hilger Perry; Allen, J. Garrott; Owens, Frederick M.; Schafer, Paul W., and Dragstedt, Lester R.: *S. G. & O.,* January, 1945, **80**: no. 1, 85-96.

Lam, Conrad R., and Harkins: *Bulletin Amer. Col. of Surgeons,* War Issue, April, 1942.

Levenson, Stanley M.; Davidson, Charles S.; Lund, Charles C., and Taylor, F. H. L.: *S. G. & O.,* May, 1945, **80**: no. 5, 449-469.

Longmire, William P., Jr.; Duncan, George W., and Blalock, Alfred: *S. G. & O.,* October, 1944, **79**: no. 4, 434-437.

Lockwood, John S.: *Annals of Surgery,* August, 1946, **124**: no. 2, 319-327.

Lund, Charles C., and Browder, Newton C.: *S. G. & O.,* October, 1944, **79**: no. 4, 352-358.

Madden, S. C.; Bassett, S. H.; Remington, J. H.; Martin, F. J. C.; Woods, R. R., and Shull, F. W.: *S. G. & O.,* February, 1946, **82**: no. 2, 131-143.

Meyers, Karl A., and Kozoll, Donald D.: *S. G. & O.,* February, 1944, **78**: no. 2, 181-199.

Murihead, Ernest E.; Grown, M. H., and Walker, Albert T.: *S. G. & O.,* April, 1946, **82**: no. 4, 405-413.

Mulholland, John H.; Tui, Co.; Wright, A. M.; Vinci, V., and Shafiroff: *Annals of Surgery* **118**: December, 1943, no. 6, 1015-1023.

McDonald, Joseph J.; Cadman, Edward F., and Scudder, John: *Annals of Surgery,* August, 1946, **124**: no. 2, 332-353.

Moon, Virgil H.: *International Abstract of Surgery,* July, 1944, **79**: no. 1, 1-10.

Roback, R. A., and Ivy, A. C.: *S. G. & O.,* November, 1944, **79**: no. 5, 469-477.

Siler, Vinton E.: *S. G. & O.,* August, 1942, **75**: no. 2, 161-164.

Urkov, Joseph C.: *American Journal of Surgery,* February, 1946, **71**: no. 2, 242-252.

Wilensky, Abraham O.: *International Abstract of Surgery,* May, 1945, **80**: no. 5, 323-337.

Wainwright Building.

DISCUSSION

DR. EVERETT IDRIS EVANS, Richmond: One of the unsettled controversial matters concerning the treatment of burns left after the wide and varied experience of the past war has been that of the importance of locally applied sulfonamide or penicillin powder. Although several observers, including our own group, have been at times impressed with the value of the local application of sulfonamide in an oil base to the burn surface, it must be admitted that other groups which included most competent investigators have had excellent results in burn therapy when nothing but the simplest of bland ointments, such as vaseline, was applied to the burn surface. Hence, it is still very difficult to give a final decision as to the importance of the local application of chemotherapeutic agents to the burn surface. The general excellent results obtained when only simple vaseline ointments are applied to the burn surface, especially when they are left untouched from 10 to 12 days, make one feel that perhaps some of us may be over-enthusiastic about the local application of sulfonamides or penicillin to the burn surface. It appears that the most important thing may be the use of the occlusive dressing which is kept in place for 10 to 12 days, at which time most of

the primary healing will have taken place in ordinary so-called second degree burns. I believe that it is honest to say that we still see very little surgical infection in the burns treated with this preparation; also, we have never, so far as I know, seen sulfonamide intoxication from absorption of the drug from the burn surface. Neither have we noted any delay in healing because of the locally applied sulfonamide. Therefore, we must state again that the question of the importance of local application of sulfonamides is still an unsolved matter.

Dr. Lupton has stressed rightly the importance of the adequate management or prevention of shock in the burn patient. One practical point that we have learned: It appears to us that it is well in a severe burn to partition the plasma or whole blood transfusions so that smaller amounts are given about every six hours for the first 24 or 36 hours. We now give regularly whole blood or whole blood and plasma to the severely burned patient at about every six hours, in amount of 500 to 1,000 c.c. We no longer fear giving whole blood because of primary high hematocrit reading. More and more, we are impressed with the value of whole blood in the primary management of burn shock.

Dr. Lupton has spoken of the importance of an adequate urinary output as a guide to fluid intake in the burn patient. A careful record of urine output is probably one of the most important portions of the patient's daily record. If the output can be kept up to 1,200 to 1,500 c.c. during the first 2 or 3 days, one can conclude in an average burn case that therapy is quite adequate. As many of you probably know, we have never been enthusiastic about the use of large quantities of salt in the early treatment of burns, but we do administer salt to the burn patient, i.e., about 9 to 15 gms. of salt daily in the first 2 or 3 days.

As has been brought out so clearly by the work of Lund and Elman, one of the really important matters concerned in adequate burn therapy is the supplying of adequate protein in character and amount to the burn patient. Those of us who are working with burns at the Medical College of Virginia are convinced that adequate protein nutrition probably plays as important role in lowering burn mortality after the shock period is past as any other single factor. Large amounts of protein are needed, often to the amount of 150 to 200 gms. per day. This can be supplied most often by mouth in the form of various meat powders, milk powders, or the newly available lactalbumin and amogen preparations. Large whole blood transfusions are a means of supplying easily fairly large amounts of available nitrogen. Whole blood is a far better source of nutrition in the surgical and burn patient than plasma. From 100 c.c. of whole blood can be derived about 19 gms. of available nitrogen, whereas the same amount of plasma would supply only 4 to 5 gms.

It has been a pleasure to read over carefully Dr. Lupton's paper. I am sure that if his advice and practices were followed in the treatment of the average burn case there would be a general lowering of mortality in severely burned patients in this area.

DR. JAMES GUY PRICE, Norfolk: As Surgical Resident at the Norfolk General Hospital, I have observed and assisted in the care of several of Dr. Lupton's burn cases and have been very much impressed with the results obtained with M.C.V. ointment and compression dressings. There are several features which deserve further emphasis. Due to the local bacteriostatic effect of M.C.V. ointment, debridement and cleansing may be reduced to a minimum, avoiding shock and serum loss at the early, critical stage. The ointment has a marked analgesic effect and since it is very "workable", it can be applied quickly. By varying the wax content, a satisfactory consistency can be maintained in summer or winter. One of the most important features of the ointment is that little or no bleeding or pain is encountered in changing dressings. As a dressing is removed a thin protective film is left covering the raw granulation tissue, which prevents trauma, bleeding, and distress to the patient.

Epithelialization is apparently enhanced with this material and often much less grafting is required than would be expected. We have noted that a satisfactory estimate of the patient's need for plasma, blood, or other intravenous therapy, can be made from the red cell count, and hemoglobin determinations, plus a careful record of the fluid intake and output. This is important since extensive blood chemistry determinations are often impractical.

We keep a well stocked, sterile burn kit available; and this, plus teamwork, saves much valuable time. Usually a team of two or three does the local dressings, while a second team procures and administers plasma and other general care as needed.

Care should be taken in repeating doses of morphine where circulation is poor, since it may not be absorbed until circulatory balance is restored and the full amount of the drug may act at once.

DR. RUSSELL V. L. BUXTON, Newport News: I should like to compliment Dr. Lupton on his presentation, because I feel that it is especially indicated when we are likely to run into these cases of severe burns. It is a very disheartening thing to see a man about one-third or two-thirds severely burned and to feel that you are working under a desperate handicap in not knowing how to proceed or what is the best method of procedure. It certainly seems to me that under his organized set-up the patient should get a good result, or better than when it is not organized.

There is one thing I should like to stress that Dr. Lupton brought out, and that is the desirability and almost the necessity of combining your local and general treatment. I remember one case with a very severe burn that we went to work on with pressure bandages with vaseline gauze, not the ointment Dr. Lupton recommends; and by the time we had applied all the bandages and pressure dressings the man's veins had collapsed to such

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a point that it was not possible to put even a cannula in the ankle vein. We lost this patient, I know, partly because we had no other place to put this cannula. Probably half-hour or forty-five minutes before that vein might have been patent.

There is one other thing I want to bring to your attention. I feel sure that Dr. Lupton left it out because of lack of time. That is the necessity of giving these patients tetanus antitoxin. We convert these wounds from open wounds to closed wounds by the compression dressings, leaving a fertile field for the growth of anaerobic bacteria; and tetanus antitoxin should be given.

DR. LUPTON, closing the discussions: I wish to thank Dr. Evans, Dr. Price and Dr. Buxton for their interesting discussions.

I am in complete agreement with the statement that occlusive pressure dressing is probably the most important development in the local treatment of burns in recent years.

From the large number of burned patients which we have observed, I believe that better results are obtained when modified M.C.V. ointment (or M.C.V. ointment) and pressure dressings are used, than when vaseline gauze and pressure dressings are used, because infections appear to be definitely lower, the healing period shorter and the patients are more comfortable.

Essentials of Summer Diet.

A Philadelphia nutrition expert presents some hints on the essentials of a summer diet in the June issue of *Hygeia,* health magazine of the American Medical Association.

Michael G. Wohl, M.D., Chairman, Advisory Committee on Nutrition· Philadelphia Department of Public Health, states that "the first requirement of a balanced diet is an adequate energy intake for work, play and the body functions. The amount varies with age, sex and physical activity. For the man of average size engaged in desk work or other nonstrenuous occupation, the daily requirement is calculated, scientifically, as 2,500 calories or heat units. Growing children and laborers require two or three times this caloric intake."

Pointing out that in summer, since there is no heat loss from the body for which to compensate, the amount of food eaten may be reduced, the author cautions that the reduction should not take place at the expense of the proteins.

"Proteins are not only the 'body-building' foods," Dr. Wohl writes. "They are necessary for growth and for replacing tissues worn out through activity, but also they have a vital function in building resistance to infection."

Summer makes no difference in the requirements for the other essentials of a balanced diet, the vitamins and the minerals, states the author. "We must have iron in the blood to get oxygen from the air. We must have calcium and phosphorus to build strong bones, to build tissue, to prevent rickets. Calcium is also essential to maintain nervous stability. We must have iodine to prevent goiter."

New Remedy for Motion Sickness.

A new prescription specialty for "motion sickness" has been announced by Dr. Theodore G. Klumpp, president, Winthrop Chemical Company, Inc. He stated that the new chemical compound was a further development of what was first used by the armed forces during the war and described it as "a logical preparation to combat sea, air, train and automobile sickness." It is the first of its kind on the company's long list of medicines, to be stocked and thoroughly tried for clinical evaluation on major steamship and air lines. "More than 80 per cent of the motion sick travelers studied obtained relief".

"It is a mixture of scopolamine, luminal and atropine. Motion sickness results from excessive stimulation of the organ of balance located in the ear, in addition to apprehension, nervousness and fatigue incident to modern travel. Scopolamine and atropine are known to produce the best clinical results in counteracting the physical effects of unaccustomed motion, while luminal, through its calming effect, allays the apprehension and excitement which contribute to sea and air sickness."

THE PSYCHONEUROSES*
What the General Practitioner Should Know

ADDISON M. DUVAL, M.D.,
First Assistant Physician, Saint Elizabeths Hospital,
Washington, D. C.

There are more patients today who are in need of psychiatric help than could possibly be treated by all our available psychiatrists. This fact can only mean that many of these patients will continue to be seen and treated by the general practitioner—whether he likes it or not—if they are to receive treatment at all. It has been estimated that from 40 to 60 per cent of patients in the out-patient clinics of our general hospitals are in search of medical aid because of emotional problems rather than organic disease. Even where the problem is primarily of organic etiology, the psychological factors may also be of particular importance. It has been reliably reported that during the period from January 1, 1942 to June 30, 1945 one and three-quarter million men were rejected for military service for neuropsychiatric reasons, and during this same period another million men were hospitalized for neuropsychiatric treatment. Most of this group had minor emotional disturbances for which hospitalization is usually not necessary in civilian life because of its greater flexibility of adjustment possibility. Under incidental stresses these patients may have some recurrence of symptoms which serves to stimulate a visit to their physician. The Veterans Administration is attempting to meet this challenge by the formation of out-patient mental hygiene clinics where active psychotherapy can be made available. At present only a limited number of patients are receiving psychotherapy due to the scarcity of trained psychiatrists, even though every effort has apparently been made to expand the program.

What of the men and women who were rejected for military service for psychoneurosis, and what of other psychoneurotics in the civilian population? Will the general practitioner be ready and willing to share in responsibility of treatment of these patients? If so, what can he do to prepare himself for this important work?

A discussion of this problem might be divided into several topics.

1. Avoidance of misconceptions.
2. Development of tolerance and real interest.
3. Development of clear concept of personality function.
4. Classification.
5. Treatment.

1. MISCONCEPTIONS

Some laymen have many misconceptions about mental illness, and unfortunately this is also true of some practicing physicians. What are some of these misconceptions? Many people believe that any type of mental illness means insanity, lost mind, or maniacal behavior. Actually, only a few patients with major psychoses show such behavior, and only infrequently is it even necessary to hospitalize the psychoneurotic patient. Many people believe that all patients with any form of mental illness are incurable, whereas we know that most psychoneurotics are amenable to therapy and a large percentage of psychotics also respond well. Many people believe that there is a definite stigma attached to any mental diagnosis. There is no basis in fact for such a conclusion. This concept seems to be a residual of an ancient theory that mental illness was due to infestation by evil spirits. Many people believe that mental illness is only caused by physical disease, but we know today that patients having psychogenic psychoses or psychoneuroses actually have no such abnormal physical condition. Here the problem is primarily one of disturbance in the emotional life of the individual. Some believe that all mental illnesses are uniform in gravity and appearance, that such illnesses are hereditary or caused by some injury, and that good intelligence and mental illness are incompatible. Let us insist that modern medicine banish such misconceptions and that we approach these problems strictly through the scientific method, with our minds unhampered by such shackles of superstition.

2. TOLERANCE AND INTEREST

There are certain physicians who, after finding no physical cause for the patient's complaint, feel a definite sense of frustration which may be ex-

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pressed in the statement, "You have no physical disease and I cannot help you—you just think you are sick." After such remarks some physicians lose all interest in the patient and often hope he will not return. Another physician, in attempting to follow some physical treatment method for the emotionally distressed patient, may say, "Your blood pressure and heart action are not exactly normal and we must start treatment." Both decisions are probably in error—the first because it shows lack of tolerance, interest and understanding, and the second because the comment may convince the patient that the cardiovascular condition is serious and is the cause of his symptoms. This conclusion will thus tend to foster invalidism. The best stimulus to good patient-physician relationship is an attitude of wholehearted, sincere interest on the part of the physician, along with a willingness to listen carefully at least once to the patient's entire story of his complaint problem. The alert physician will learn much of the personality of the patient from the method of recital itself as well as from the content material. With the development of individual techniques of interviewing, the physician will find himself elated with his successes and stimulated to further study. A broader personal tolerance will be gained and this will stand him in good stead when psychotherapy begins to be utilized in the treatment situation.

3. PERSONALITY FUNCTION

Even though we have learned much about personality and behavior disorders through specific studies of such disturbances, it is necessary to keep in mind a fairly clear conception of the personality development and average function in a fairly well integrated individual. Such concept is useful as a standard for comparison. It seems obvious that the maturation of the personality to the point where the individual through excellent integration can live in a milieu of adequate self-esteem, security and happiness with his social group, should be the ultimate aim and goal of everyone. The culmination of such aim is dependent on the individual's hereditary physical equipment, capacity to learn, and his biological urges or drives, as well as his interpretation of life experiences in conjunction with his motivations.

Whether the medical man prefers to accept all the precepts of one of the dynamic theories of behavior such as the behaviorism of Watson, the psychoanalysis of Freud, the biodynamism of Masserman, or the psychobiology of Meyer, would seem largely a matter of personal choice rather than necessity. Probably the most workable theory will depend on the personality structure of the physician using it, rather than the personality of the patient under treatment anyway. Allport has defined personality as "the dynamic organization within the individual of those psychophysical relationships that determine his unique adjustments to his environment." Such dynamic organization is seriously influenced by the early child-parent relationship. The smooth, steady, loving yet firm and intelligent interpersonal response of the parents does much to promote similar response in the child. As maturation proceeds such child seems able to withstand larger and larger doses of frustration without disturbed emotional equilibrium. On such stable personality integration may well depend his future mental health.

It has been clearly demonstrated that personality function becomes disturbed during periods of unusual stress. The extent of such disturbance will depend on the degree of integrating stability as well as the duration and extent of the stress. Vulnerable personalities will show earlier difficulty and will not rebound to previous normality as quickly as the better integrated personality. This was repeatedly demonstrated in both world wars in instances of combat induced anxiety. In those patients where the relief of stress does not result in return of normal personality function, the anxiety continues in obvious evidence or it tends to become camouflaged through the development of substitutive behavior patterns. It is at this stage that we can say that personality deviation has occurred to such extent that the patient now shows a psychoneurotic reaction or a psychoneurosis. The symptom of anxiety, which is the core of difficulty in the neuroses, seems to be a result of the conflict between the instincts or biological needs, such as nutrition, self-protection, and sex and the culturally determined need of personal prestige in the setting of attempted domination by the personal censor, the conscience.

The symptom of anxiety is directly felt by the patient in anxiety neurosis and anxiety hysteria, as well as when the compulsive set of behavior is threatened in the psychasthenic. It is quite camouflaged in hysteria—where we often see an attitude of "la belle indifference". Anxiety often results in

overstimulation of the autonomic nervous system, which culminates in various somatic responses simulating actual organic disease. When we have a clear idea of the personality of our patient, his usual modes and methods of response to stress, his motivations and his present stress situation, we can then begin to understand the specific meaning of the presenting symptoms. These symptoms issue from the conflict situation and seem to be an expression of the patient's failing attempt to reach a stable equilibrium.

4. CLASSIFICATION

Classification of the various psychoneurotic responses has been made by different procedural methods. The official classification as recommended by The National Committee for Mental Hygiene and accepted by most public mental hospitals follows:

1. Hysteria.
2. Psychasthenia or compulsive states.
3. Neurasthenia.
4. Hypochondriasis.
5. Reactive depression.
6. Anxiety state.
7. Mixed psychoneurosis.

It has been my experience that most psychoneurotic patients show a great variability of symptoms during their illness, with the result that a different diagnostic category seems indicated at these different times. For that reason it seems well for the physician not to think too much about the importance of a correct diagnostic label, but to think more in terms of what do the symptoms indicate is happening within the personality structure. When so considered, we are utilizing the dynamic rather than the topographical approach to the undertanding of such disorders.

The most frequent personality adaptations utilized by the psychoneurotic patients are phobias, obsessions and compulsions, substitutions, conversions, preoccupation with body functions, and the development of invalidism. Such adaptations are not socially acceptable and in the majority of instances the patient realizes this fact, as well as the "irrational" nature of his symptom responses. This fact in part distinguishes the psychoneurosis from the psychosis. In the psychosis we also find one or more of the following:

1. Demonstrable specific organic pathology.
2. Mental deterioration.
3. Marked mood disturbance.
4. Extreme and persistent distortion of reality.

Many psychiatrists are coming to believe that the primary difference between psychoneurosis and psychosis is quantitative rather than qualitative and that the psychoneurosis stands midway between "normal" personality function and the marked dysfunction evidenced in the psychosis.

5. TREATMENT

How can the general practitioner approach the problem of therapy in the psychoneuroses? If he has eliminated his misconceptions concerning mental illness, if he has tolerance and real interest and if he keeps clearly in mind the primary functions of personality, then the approach to therapy is not difficult. The principles of treatment follow very specifically from the facts in the development of the personality disorder. Anxiety is the symptom which causes the patient the most distress and our first effort is aimed at its diminution. Through a calm assessment of the facts in the patient's life history and in the complaint problem, the understanding physician can utilize enough of constructive suggestion, persuasion and explanation to give reassurance to the patient and temporarily allay his anxiety. The actual telling of the story is often helpful in itself. The primary effort in treatment is directed at changing the environmental or interpersonal stress factor or in altering the personality structure of the patient or both. The first mentioned can very often be rather easily changed or adjusted, but the latter is more difficult. However, if the physician can gain the full confidence of the patient, he may then be able to gradually influence the rigidity and severity of the conscience factors in the patient and thus gradually increase the patient's tolerance of himself as well as his life situation. In this way the patient comes to gradually understand his own responses to stress, insight is gained and intelligent utilization is made of those factors which will foster personal security and better integration. Such is the true aim of psychotherapy. The patient's potential assets can thus be mobilized and better used. Such efforts are time consuming, of course, and the physician may find it expedient to refer the patients with more severe emotional reactions to a psychiatrist for more careful, extended or special treatment. Only the experienced and specially trained psychiatrist should use such additional treatment

methods as narcotherapy, hypnotherapy, sub-shock insulin, electro-shock therapy or psychoanalysis.

SUMMARY

A very brief summation of what the general practitioner should know about the psychoneuroses has been attempted. Emphasis has been placed on eliminating misconceptions, the promotion of the physician's interest and tolerance, the development of a clear concept of personality function, the classification of the various psychoneurotic reactions and their treatment. Most of the patients with this type of personality disorder will not be treated by psychiatrists, but by the general practitioner, and on his attitude toward treatment may rest the final outcome of a large sector of our civilian population who are failing in adaptation.

Physical Exams Have Depreciated.

The tendency of the Civilian Aeronautics Administration to depreciate the quality of physical examinations for pilots has been assailed by both *The Journal of the American Medical Association* and the *Journal of Aviation Medicine.* The May 10 issue of *The Journal of the A.M.A.* says:

The Journal has commented previously on the failure of the Civilian Aeronautics Administration to have its physical examinations conducted by competent physicians. The *Journal of Aviation Medicine* points out that the department ruled that osteopaths could make these examinations a few years ago and now examinations are being accepted even from chiropractors. How many of the persons who observe air transport realize that this is the type of protection afforded by the government agency? When one contrasts the kind of education given to low grade nonmedical healers with the type of examination made by specialists who are really competent in examining the eyes, the ears and the other special senses on which safe flying so greatly depends, the folly of accepting examinations by the incompetent becomes clearly apparent. The *Journal of Aviation Medicine* points out that the bars have not thus far been lowered in the case of commercial and airline pilots, but the tendency to depreciate the quality of the examination makes the hazard of such lowering imminent. Surely here is a responsibility that the administrator cannot dodge.

Disease Rate High Among Day Nursery Children.

A Swedish social welfare committee, investigating the incidence of disease in state-aided day nurseries, found that nursery children were more susceptible to disease than children who stayed at home, according to the Stockholm correspondent of *The Journal of the American Medical Association.*

Writing in the April 26 issue of *The Journal,* the correspondent states that according to the report "many of the nursery children have had colds for long periods and many have constant fever. Ear infections are far more numerous. Sinus and kidney inflammations have appeared among the nursery children, but not in the control group (children who stayed at home). Bacteriologic studies revealed that certain types of bacteria, which do not ordinarily appear in epidemic form, have caused minor epidemics at the nursery and that children are hardly recovered from one infection before they contract another or are perhaps infected with several types of bacteria simultaneously."

The investigating committee made recommendations for the installation of ultraviolet lamps and the impregnation of floors and textiles with oil to reduce the risk of infection. "With such a large percentage of Swedish mothers out at work every day," states *The Journal* correspondent, "these nurseries are of the utmost importance in the present state of society."

PENICILLIN IN SYPHILIS*

E. E. BARKSDALE, M.D.,
Yater Clinic,
Washington, D. C.

Ehrlich was much elated when he first discovered arsphenamine. He thought that he had found the wonder drug to cure all syphilis. He was soon disillusioned. It promptly became very obvious that his single "shot" treatment not only did not cure syphilis, but, given in such quantity as to approach a high cure rate, it also caused a high death rate. Since this original discovery, it has been shown that in order to have an optimum cure rate and a low death rate, the administration of the drug must be prolonged over days, months, and even years in some cases.

To Dr. John Mahoney at Staten Island, New York, goes the credit for the discovery of the value of penicillin in syphilitic therapy. Mahoney is a very modest man and even to this date, after over four years of research, he makes no claim that penicillin is the ideal drug. By an ideal drug we mean one which cures but does not kill.

Soon after Mahoney's discovery, we began using penicillin in the treatment of syphilis at the National Naval Medical Center. Over a three year period of time, 788 patients have received penicillin for the various stages of syphilis. The purpose of this paper is to point out the observations made in this study, listing both the advantages and disadvantages of the drug. It cannot be said that it is the ideal drug. On the other hand, it is a good drug.

Up until March, 1946, the following dose schedule was used: (1) Early syphilis, 40,000 units I.M. q. 3 h. for 60 doses; (2) Latent syphilis (late) 40,000 units I.M. q. 3 h. for 100 doses; (3) Central nervous system syphilis, 40,000 units I. M. q. 3 h. for 200 doses plus ten (10) artificial fever treatments. It was felt that satisfactory progress was being made. A fairly low relapse rate was occurring. Then all of a sudden the bomb exploded. There were certain indications from various places that a high relapse rate was occurring in syphilis. A high failure rate in the treatment of gonorrhea, pneumonia and other diseases, due to supposedly penicillin susceptible organisms, was occurring. It became known that commercial penicillins contained four fractions—namely, penicillin G., F., X. and K. Very little is known in regard to F. and X. Penicillin K., although more potent than G. *in vitro*, was found to have very little, if any, value *in vivo*. It was also known that in order to produce a penicillin high in G. precursors had to be fed the mold. It was then realized that one theoretically might obtain a penicillin very high in K. and very low in G., which would have to be classified clinically as a poor penicillin. At that time no assurance could be given that one was always obtaining a penicillin rich in G. Consequently, the Navy routine of treatment was changed so as to be as follows: (1) Primary syphilis—100,000 units I.M. q. 3 h. for 60 doses; (2) Secondary and latent syphilis—100,000 units I.M. q. 3 h. for 90 doses; (3) C.N.S. (central nervous system) syphilis—100,000 units I.M. q. 3 h. for 200 doses plus ten (10) artificial fever therapy treatments. In this way, it was felt that each individual patient in all probability would receive a drug fairly rich in G. The placing on the market of commercial penicillin G. may render such a large dose unnecessary.

At the Naval Hospital during the war, it was a routine to send penicillin treated cases back to duty immediately upon the completion of their course of therapy. At that time the lesions in the majority of the cases were not completely healed. However, no case had remained darkfield positive more than 20 hours. These cases were under orders to report for periodic examinations. In spite of this, the doctors in the area frequently called, expressing amazement that patients were sent back to duty with open lesions. These lesions would heal within five to seven days after the treatment was completed.

Also, with the possible exception of sero-negative primaries, the blood test was still positive when the treatment was discontinued. From an analysis of this series of cases, it was found that on the average the serology approached negativity in six months in primary syphilis, in 8 months in secondary syphilis, in 9 months in the latent serological syphilis only, and in 7 months in asymptomatic central nerv-

*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 14-16, 1946.

ous system syphilis. However, in a group of cases with the original basis of diagnosis being a positive serology only and having had much treatment with arsenicals and bismuth, some for ten years, no change could be brought about in the serology with penicillin. This brings up the often asked question of what can be done with syphilitic John Doe who has received arsenic and bismuth for years but whose blood is still positive? The answer is, nothing. In view of the fact that the serology of four groups of definitely proven syphilitics, namely, primary, secondary, high titre serological and central nervous system syphilis can be definitely influenced by penicillin, why then can nothing be done for the Wassermann-fast case? Could it be that these cases do not have syphilis but belong in the group of general biological false positives?

With the exception of sero-negative primary syphilis, prenatal syphilis, congenital syphilis, the over-all failure rate has been fairly high. A total of 600,000 units produces an estimated failure rate of approximately 65 per cent. A total of 2.4 million units produces an estimated failure rate of approximately 15 per cent. It is of interest that in the group treated with a minimum of six million units since March, 1946, there has been to date no single known failure. It should, however, in fairness be pointed out that many of these cases have been separated from the service and many others transferred to distant areas.

When the Penicillin Control Committee (Craig and others) reported their observations on the first 2,000 cases treated, no mention was made of untoward reactions other than a few mild Herxheimers occurring in the treatment of early syphilis. This report was made in the early part of 1944. The present committee does not agree with that report. From their observations in the treatment of over 20,000 patients with penicillin for one thing or another, it is felt that the over-all reaction rate is approximately 8 to 10 per cent. Penicillin is capable of producing three types of reactions:

I. Therapeutic shock—
   a. Herxheimer reaction
      (1) Early syphilis manifested by chills and fever and of no great significance.
      (2) Latent syphilis may be very dangerous, particularly involving the nervous and cardiovascular systems.

II. Allergic reactions—
   a. Urticaria and laryngeal edema (may be fatal)
   b. Exacerbations of fungus infections with "id" reactions
   c. Dermatitis venenata from its topical use
   d. Exfoliative dermatitis

III. Neuritis—
   This is thought to be some type of toxic reaction usually involving the peroneal nerve with footdrop.

Penicillin may also produce an immediate and delayed allergic reaction. It is known that penicillin can be recovered from the urine for as much as six to eight weeks, in some cases, after the drug has been discontinued. It is true that the majority of the reactions are mild, transitory and lend themselves to good dermatological treatment. The advent of benadryl has been of great value in controlling the urticarial reaction. In many cases in which urticaria occurs, penicillin can be continued and the urticaria controlled with benadryl.

It is felt, however, in view of the large number of reactions that do occur and the potential danger of some of them, that penicillin should not be administered to any patient unless under medical observation. A great deal of credit should go to American Industry for their mass production of penicillin which has undoubtedly saved hundreds of thousands of lives in both the Armed Forces and in civilian life. In spite of this, it is felt that the American public has been sold "down the river" by the sale over the drug store counter of penicillin in ointments, lotions, nose drops, mouth washes, tooth paste, and even soap. Less than a decade ago we saw this same thing happen with vitamin therapy.

By the way of conclusion, the following outline summarizes some of the things we do know and do not know about penicillin in the treatment of syphilis:

(1) It renders positive darkfield lesions negative just as quick, if not quicker, than any other drug, but we don't know how long it will keep them negative.
(2) It produces a reversal of serology just as quick as any other drug, but it may not stay reversed.

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(3) It causes gummatous lesions to disappear quicker than with the use of any other drug, but we have no assurance that another gumma might not occur elsewhere.

(4) It produces a reversal of spinal fluid to negativity especially in regard to the cell count just as quick as any other procedure, but we do not know five to ten years from now if that patient will be alive and well, in an insane institution, or in the grave.

In conclusion, it can be said that we are in all probability in the same boat that Ehrlich was when he first discovered 606. He knew that he had a good drug, but time has proven that he did not know what to do with it.

DISCUSSION

DR. THOMAS W. MURRELL, Richmond: This paper will have various effects, according to the age of the hearer. To one, whose first cases of syphilis were treated with mercury and iodides; who went through the chaos of the early arsphenamines; it is an old story, neither unexpected nor disheartening.

Two years ago, at the American Medical Association meeting, an essayist on penicillin said to the audience; "Please remember—this is the first inning, not the ninth." It takes twenty years to prove luetic therapy, and so we can say today; "Remember—this is the second inning; not the ninth". Only when twenty years have passed will the relation of this drug to the central nervous system involvement be proven. Adequacy is a big word, and nowhere in the development of penicillin therapy is it more true that the adequacy of today is the inadequacy of tomorrow.

It is plain from Dr. Barksdale's paper that the situation of penicillin therapy is in a state of flux, but there is hope for better things. This hope is built on several "ifs" and some more likely of fulfillment than others.

"If" the manufacturers can work out a technique of standardization of the factor most effective! This seems the most likely of our hopes to be fulfilled.

"If" some modification can be made to slow up its excretion by the kidney and so maintain a proper blood level without so much replacement! This would, indeed, be a fulfilled dream.

In the meantime, "What is the best technique of use?" is the pressing question with the average practitioner. Dr. Eagle, in a recent address, made a statement which suggests a possible answer. This refers to the synergistic action of drugs used in luetic therapy. He states that mapharsen is synergistic with penicillin and that bismuth is synergistic with mapharsen, but bismuth is not synergistic with penicillin.

If the treatment is to be lengthened it would seem reasonable to first treat with penicillin and mapharsen, then mapharsen and bismuth, and, finally with bismuth alone.

The great hope is that syphilis, through penicillin, may once more become the problem of physician and patient, treated in the office with all the protection of professional care and all that this implies.

Crusades are great things educationally, but, like the religious crusades of old, they seldom reach and never hold the Holy sepulchre. The crusade against syphilis has, in a large measure, shifted the responsibility of the situation to the shoulders of the agencies of Public Health. They have met this largely through Clinics, rapid treatment centers, and other measures, but they are not succeeding. Why? Because the physician is indispensable.

Though on our way, we have not yet rid ourselves of the leper complex about syphilis. A self-respecting individual in an average community cannot afford the exposure of the rapid treatment center. On the other hand, the average wage earner cannot afford the same service paying for hospital space and penicillin costs. It reminds me of Osler's address on the hospitals of England, when he first went to Oxford. The very rich and the very poor receive ample care, but the large group between the extremes was neglected.

Now, if due to a different technique (such as the penicillin in wax), adequacy can be met by a daily dose, and if the drug can be supplied by Public Health and given in the dignity of a doctor's office, if that can be, then the old syphilographers may quote the Scriptures: "Lord, now lettest Thou Thy servant depart in peace for mine eyes have seen Thy salvation."

If this almost dazzling hope can become a reality, the Public Health should make one definite pre-requisite—public money is a public trust and should not be wasted, and no case treated out of public funds should be given the drugs unless it is understood and agreed previous to treatment, that a spinal examination will be done and results reported, three to six months after completion of routine.

This is a keystone "must"; without it the future will always be uncertain and a possible dread.

DR. E. M. HOLMES, Richmond: Dr. Barksdale is to be congratulated on his comprehensive presentation of a most difficult subject.

Today, as Dr. Barksdale said, "Penicillin therapy is in a most confused state." Part of this confusion is due to the fact that there are innumerable dosage schedules being used, and also because the complete pharmacological action of the various fractions contained in the drug is not known. These factors, coupled with the reported high serological and clinical relapse rates, have all served to cause confusion, and, in turn, caused many of us working with the drug to become at times pessimistic. Despite all of the confusion, penicillin, from the viewpoint of the public health officer, is still the drug of choice in the treatment control of the syphilitic.

With the advent of penicillin in the treatment of syphilis, the need for case holding, i.e., field visits by nurses and investigators, has been obviated. In the period 1936 through 1942 the clinics and private physicians

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throughout the State were using the various arseno-bismuth schedules of therapy. In that period the local health departments were compelled to make constant home visits to keep patients with syphilis under treatment. In many instances the health officer was forced to resort to quarantine and legal measures to hold infectious persons under treatment for the protection of the public health. This practice was time consuming, expensive, and caused the very important case finding program, i.e., contact investigation, to be neglected. Under the old system of treatment the patient had to come to the public clinic or to the family doctor's office at least once and sometimes twice a week for periods as long as eighteen months to two or three years. This placed a hardship on both the patient and the physician. In consequence, nearly all private physicians referred their patients with syphilis to public clinics, and persons with syphilis lost contact with their physicians, and, in turn, the personal aspects of the patient-doctor relationship suffered.

The public clinics failed to achieve their objective in that they did not provide adequate treatment due to difficulties encountered in case holding. Of the 20,000 or slightly more persons placed under treatment for syphilis in this State in the interval 1936-1942, surveys revealed that only 19 per cent remained under treatment long enough to receive minimal acceptable therapy (20 arsenical and 20 bismuth injections). Thus, many individuals relapsed to infectiousness and became a danger to the public, and many more will relapse and become late syphilis catastrophes.

Virginia is not the only State to have difficulties in its case holding. Nearly all states and quite a few of the private clinics in America experienced the same difficulties. The problem in case holding was universal due to the fact that the treatment was painful, tedious and time consuming. Thus, as a public health officer, I must admit that the clinic system under arseno-bismuth therapy failed to achieve the desired results.

Using penicillin under local hospitalization or in rapid treatment centers, we are now able to control the infectious patient. The newer form of therapy has obviated the necessity of case holding and the public health nurses and investigators are now able to devote their time to intensive case finding work and follow up of the treated case for the private physician.

Both from the private physician's viewpoint and public health viewpoint, penicillin is the drug of choice at this time in the treatment of syphilis. Under many of the acceptable dosage schedules that a physician may elect to use, if the patient is followed up, examined and given a quantitative serologic test at monthly intervals, there is little danger of the patient being a source of danger to the public health. By following up these patients with quantitative serologic tests both serological and clinical relapse can easily be detected, and those patients who relapse can be re-treated. Thus, I can only conclude that we can control the group of patients, mentioned by Dr. Barkdale, who relapse to infectiousness without danger to the public health, and, in turn, we gain the advantage of a system of treatment that can be given rapidly and which is far easier on the patient. Under any system of therapy, the arsenicals or penicillin, we must follow up the patient for at least five years. Penicilin therapy as contrasted with the old arseno-bismuth treatment has many advantages to both the patient and the public health.

The importance of the quantitative serologic test cannot be over-emphasized at this time. In March, 1946, it was discovered that much of the commercial penicillin which was distributed contained a high "K" fraction content. Many of you recall it was necessary for the Syphilis Committee of the Medical Society of Virginia to advise all physicians and clinics to double the dosage used at that time. It is to be hoped that Crystalline G penicillin will be freely available for use in a short time. However, cases treated since March, 1946, should be given monthly quantitative serologic tests for a period of a year and re-tested on the 15th, 18th and 24th month, and at least once a year thereafter for five years.

I agree with Dr. Murrell that the time has come for the patient with syphilis to be referred to his family physician. He in turn can refer early syphilis to the rapid treatment center or hospitalize the patient in a local hospital. The private physician is better equipped to treat late syphilis than the clinic. With this thought in view, within the last six months the State Department of Health has changed its clinics from treatment centers to diagnostic and screening centers. In the future these clinics will serve as consultation stations for the private physician and as referral agencies to refer cases to the family doctor. The screening clinics will largely be used to perform examinations on contacts of infectious cases.

In conclusion, I feel that Dr. Barkdale's paper will be of great value to the State's control program, in that he has so thoroughly outlined the advantages and disadvantages of penicillin therapy in syphilis.

DR. BARKSDALE, closing the discussion: First I wish to thank the gentlemen for their very kind discussion.

Dr. Murrell brought up Dr. Eagle's idea in regard to the synergistic action of arsenic and penicillin. I am sorry, but at the moment I do not agree with Dr. Eagle. It is true that there is some laboratory evidence that such a thing does occur. However, clinically there is no substantial proof of this. Just before leaving Washington I discussed this subject with Dr. Heller, Chief of the Venereal Disease Section of the United States Public Health Service, and he told me that in their series of cases they were under the opinion that the failure rate with mapharsen and penicillin was just as high as it was with penicillin alone. Frankly, if penicillin has failed in an individual case, I cannot see the advantage of adding a schedule of a few doses of arsenic and bismuth which alone carries an extremely high failure rate.

In regard to penicillin, peanut oil and beeswax, I have personally had very little experience with it. However, I recently heard Romansky's paper at the meeting of the

American Medical Association in San Francisco, at which time he stated that in his experience the failure rate was approximately the same as with arsenic and penicillin. Dr. Sulzberger, in discussing Romansky's paper, did, however, state that when you add beeswax you increase the reaction rate. This is apparently because American beeswax contains ragweed pollen and, theoretically, if you gave it to a patient that was sensitive to ragweed you might produce an anaphylactic shock.

We do spinal fluid examinations in early syphilis. We prefer to do them before treatment has been started. If the spinal fluid shows any type of abnormality, the examination is repeated at the completion of treatment. If it is still abnormal we go ahead with fever therapy and more penicillin.

It was stated that the clinics in Virginia have failed. I agree with this. However, it should be pointed out that the reference was to the clinics in the past using arsenic and bismuth. They have failed because it was impossible to keep a patient coming long enough to complete adequate treatment. It is on this one point that penicillin has a great advantage in the therapy of syphilis.

Microfilm Service Available from Army Medical Library.

Newest examples of microfilm duplication of the nation's greatest collection of medical literature were on display at the Fifth International Congress of Pediatrics meeting in New York in July. It was sponsored by the Photoduplication Division of the Army Medical Library, branch of the Office of the Surgeon General, U. S. Army.

A treasure chest of medical information, going back in some cases to medieval times, the Army Medical Library in Washington now has a collection of more than 1,000,000 volumes that have been gathered, catalogued and indexed since 1836 when Surgeon General Joseph Lovell began the work during the administration of President Andrew Jackson.

Through the microfilm service of the Army Medical Library, physicians, libraries and professional workers almost anywhere in the world may obtain facsimile replicas of this great bulk of existing medical literature on 35 millimeter film, according to Colonel J. H. McNinch, Commandant of the Army Medical Library.

Any page of a medical journal, book or manuscript is photographed with high-speed cameras in the microfilm process. The physician or researcher requesting the material receives the film reproduction reduced to the size of a large postage stamp for each page. These pages can be read either in small-size film viewers which enlarge the tiny microfilm, or they can be projected to large, readable size in special machines now available in many libraries and research centers. A whole book on microfilm takes only as much space as the corner of a coat pocket.

Costs are moderate for the microfilm duplicating service that brings the world's medical literature into the office of any physician however remote. Articles in medical periodicals are duplicated on microfilm for fifty cents each. Books are duplicated for fifty cents for each fifty pages or fraction thereof. Photostats are priced at fifty cents for each ten pages or fraction thereof for any single volume. There are certain restrictions on photoduplication to protect the rights of copyright owners.

Measles in Combating Kidney Disease.

Measles may prove to be effective in combating nephrosis, a kidney disease sometimes found in children, according to Drs. Richard W. Blumberg and Harold A. Cassady, of Cincinnati. Of five patients with kidney disease who became infected with measles, they state, the symptoms subsided in two while the other three experienced temporary improvement of their nephrosis. The physicians, who are from the Children's Hospital Research Foundation and the Department of Pediatrics, University of Cincinnati College of Medicine, point out that infection with measles was more effective in causing abatement of the kidney disease than any other curative agent they used. Writing in the *American Journal of Diseases of Children,* published by the American Medical Association, the authors also cite reports by other investigators which list four or five complete cures of the kidney ailment after infection with measles.

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TREATMENT OF THE SPASTIC COLON*

J. M. MACMILLAN, M.D.,
Richmond, Virginia.

The symptoms of a spastic colon present a definite clinical pattern which offers much aid in the diagnosis of this condition. All too often the diagnosis is made simply because there is no obvious organic disease to explain the patient's symptoms. The poor results obtained in the treatment of these patients are proof of the fallacy of this type of thinking. Some disturbances in colon function are encountered in a wide variety of diseases and conditions, and the colon symptoms will disappear when the primary condition is corrected. Chronic infectious diseases, nutritional disturbances, endocrine disorders, and allergy may give rise to colon pain and disturbed bowel function and must be ruled cut. Intra-abdominal disease, such as renal or pelvic disease, either because of its proximity, or through the colon reflex, may give rise to colon symptoms. Myositis or neuralgia of the abdominal wall is often falsely diagnosed as colon spasm. Carcinoma of the colon, diverticulitis, partial intestinal obstruction, dysentery, ulcerative colitis, gastrogenous diarrhea, and duodenal ulcer must all be ruled out by appropriate examination.

We have come to associate a fairly typical type of individual with the spastic colon syndrome, and lacking that type of personality throws much doubt as to the correctness of the diagnosis. These patients are a high tension type, frequently with a well developed anxiety neurosis. Besides the spastic colon syndrome, they show many other signs and symptoms of an unstable vegetative and vasomotor nervous system. Characteristically, they show hyperhidrosis, hyperventilation, heart consciousness, jitteriness and easy fatigability. This is the fertile soil necessary for the development of spastic colon syndrome.

For the diagnosis of spastic colitis, therefore, we as physicians must evaluate the individual and elicit a suitable background for a functional disorder. The variability of type and location of pain, as well as the character and frequency of the stool passages, must be noted. The physical findings should be searched for. Then, by complete history, physical examination, and appropriate tests, other causes should be thoroughly eliminated. When we have satisfied ourselves that we are dealing with a neuro-muscular dysfunction of the intestinal tract, our approach to treatment should be with two main objectives. First, local measures directed to relieve the symptoms, and, secondly, measures to relieve the underlying cause.

The first is usually not difficult, though some patients continue to have intractable symptoms until the underlying cause is determined and alleviated. The diet should be bland, low roughage in type—uncooked vegetables, seeds, skins, seasoning, and spices should be eliminated. It should be given in three fairly equal meals, or, in severe cases, in five meals, so as not to over-stimulate the intestinal reflexes by large meals. Coffee, because of its stimulating quality, should be limited to one cup at breakfast. Six to eight glasses of water is a minimum.

Many patients have resorted to cathartics and enemas to obtain bowel function. These should be stopped. It is necessary to explain to patients the irritating nature of these to get his or her cooperation. The nature of the defecation reflex and the importance of a habit time must be explained. By the use of cathartics and enemas, the normal reflex has not been allowed to function, and it is up to the physician to help reestablish that reflex. The reflex is set off by stretching the sigmoid and rectum, and this can be accomplished by relieving the spasm and irritability and increasing the bulk of the stool. There are several preparations which increase the bulk of the stool and at the same time are not irritating to the bowel. The base of these is psyllium and agar which have the ability to hold water in a collagenous form. One or two teaspoons of one of these with two glasses of water upon arising in the morning will materially increase the quantity of the stool. The addition of one to two tablespoons of mineral oil at bedtime will keep the stool satisfactorily soft. In some patients a two-cup cool tap water starting enema may be necessary from time to time during the period of regulation. In extreme cases with hard packed stools, a four-ounce cottonseed oil retention enema given each night for

*Read at the Symposium on Therapy, February 18-19, 1947, Medical College of Virginia, Richmond, Virginia.

a week is most helpful in establishing a normal routine. Where there is local anal pathology, such as cryptitis or hemorrhoids, these should be treated by appropriate means. The digital dilatation of a tight anal sphincter may help materially to establish the cycle.

Belladonna is the drug of choice for relieving the spasm and distress with which these patients suffer. It should be given in the form of the tincture and in increasing doses until the symptoms are relieved, or until tolerance is reached.

Sedatives have an important place early in the treatment. Sodium barbital, because of its more prolonged action, gives a fairly constant sedative effect. 2½ gr. tablets taken three times a day is usually sufficient. Phenobarbital gr. ¼ three times a day and gr. ½ at bedtime is widely used. Chloralhydrate gr. x in peppermint water three times a day can be used where barbitals are contraindicated.

During period of acute abdominal pain and distress, bed rest with local heat to the abdomen will usually give relief. In a few cases with continued pain, initial doses of 1/100 gr. of atropine sulfate every four hours may be necessary. Papaverine in doses of 1/6 to 1 gr. may be added to the atropine and will be found quite effective. Calcium gluconate 15 gr. given intravenously may completely relieve the abdominal pain and distress of an acute attack.

Mateer and others have reported excellent results in the relief of colon distress and the associated headache and dizziness by the use of colon bacillus vaccine. They feel that because of the colon irritation the patient becomes sensitized to the colon bacillus and symptoms are perpetuated on an allergic basis. Desensitization of the patient by graduated doses relieves the symptoms. Sodium ricinolate (soricin) 5 gr. t.i.d. will also frequently help relieve toxic systemic manifestations.

The most common underlying cause of the spastic colon syndrome is an anxiety or tension state. Many psychiatrists believe that the basic condition can only be approached by psychotherapy. This may be true where the problem is psychogenic, but instability of the autonomic nervous system may produce spastic colon symptoms in the absence of any recognizable psychic factor. The personality and background of the patient must be studied. The patient's confidence must be won. Incidents which seem to aggravate symptoms must be noted, for in them we may get a valuable clue as to the fundamental cause. The help of a trained psychiatrist may be necessary to ferret out and help treat a deep-seated anxiety state, but in most cases these are not that complex, and the physician can evaluate and correct them successfully. Many patients with this disorder harbor a cancer phobia or have a dread of surgical operations and colon resections. The patient must be reassured on this point, and the nature of the disorder must be adequately explained. The patient must be given insight into what causes his distress in order to treat him successfully.

Sexual maladjustment is notorious in producing tension states. Patients are reticent to talk about it because they feel disloyal by so doing, and, also, they do not know how to put it into words and are embarrassed. Patience and understanding on the part of the physician and leading questions at later visits will usually bring out the necessary information. Nervous tension and anxiety factors associated with work as well as home life must be reduced to a minimum wherever possible. Where tension states are high and progress is slow, a holiday from business and home will frequently prove most beneficial. New interests must be developed and recreational activities encouraged.

Regular habits of sleep and rest are essential to permanent cure. A warm bath and thirty-minute rest after a day of work will do wonders to reduce a tension state. Equally relaxing is a 20-30 minute walk in the evening. A cold shower each morning will tone up the circulation and nervous system and relieve the tired dragged-out feeling so many of these patients awaken with; and, at the same time, it seems to help balance the autonomic nervous system. Moderation in all things is to be encouraged. Coffee should be limited to one cup for breakfast and alcohol and tobacco reduced to a minimum.

As Bockus, in discussing the colon neuroses, has so ably written: "There is no medical disorder which makes greater demands on the physician's time and ingenuity than does this syndrome. The clinician, to be universally successful in the treatment of these patients, should possess the training of an experienced internist and psychiatrist and the wisdom of a philosopher. Those who approach the problem of the colonic neurosis with a sense of security and smugness, employing only routine stereotyped methods, are doomed to frequent failures."

XUM

THERAPY OF OBESITY*

JOHN P. LYNCH, M.D.,
Richmond, Virginia.

Obesity, according to Newburgh, may be defined as that condition of the body characterized by an abnormally large amount of adipose tissue. Life insurance companies and others have published tables of normal weights for respective ages and heights, with which we are all familiar. Upon these tables, taking into consideration 10 per cent deviation for the individual variations, we decide whether or not a given patient is obese.

There have been offered by various investigators many theories of the etiology of obesity. It was thought for example that most obese people had low metabolic rates. This is now known to be incorrect. Out of 180 cases studied by Grafe only three showed basal metabolic rates lower than normal. Strang and McClugage in painstaking experiments have demonstrated that obesity is not due to a lessening of the specific dynamic effect of food. Nenenschwander-Lemmer also demonstrated that obesity is not due to an abnormal economy of food ingested, nor is it due to the inability of obese people to release fat from adipose tissue. This was demonstrated by Malcolm Block and others, and by the same token obesity was found not due to any abnormal process of fat accumulation or storage. Obesity is not due to endocrine imbalance *per se*. We may have hypothyroidism and hypopituitarism without obesity. Even disease of the hypothalamus cannot be pointed to as the cause of obesity. Experiments on rats with injured hypothalami show that if the food intake of the injured and uninjured rats remains constant no obesity results. If the food is unlimited the injured rats consume more food and consequently become fat.

There is therefore but one fundamental cause of obesity, namely, that the intake of energy in the form of food exceeds the outflow or expenditure. This excess is stored in the form of adipose tissue.

Factors which operate in this process are multiple and will only be listed:

1. Heredity: Obesity is not inherited but eating customs and habits are. The obese family enjoys the habits of high caloric meals.

2. Constitutional changes such as occur at puberty and the menopause, at childbirth and lactation, cause a lessening of energy requirements but not in eating habits, hence frequently resulting in obesity.

3. Changes of occupation, such as from the participation in competitive sports to the sedentary life of office routine, again may upset the balance in favor of fat accumulation.

4. Orthopedic or other disease may suddenly reduce a patient's activity and favor obesity.

5. Psychologic maladjustment in which oral food gratification is substituted for some unobtainable craving is perhaps of greater importance in the etiology of obesity than any other of the aforementioned causes.

6. Unknown cause: We all have observed obesity whose cause cannot be so glibly catalogued. Why do appetites become abnormal? In many incidents we must confess clinical ignorance. It is hoped that further research in metabolism will solve this riddle.

In a study of 24 colored and 13 white patients made at the Endocrine and Obesity Clinic of the Medical College of Virginia Outpatient Department in 1944, we* found our average patient to be a woman 39 years of age, 5 feet 4 inches tall, weighing 223 pounds or 88 pounds in excess of normal. In many instances she was not overweight until after her marriage or after her first pregnancy. In general her family were all stout, her parents averaging 200 pounds with siblings also overweight. She consumed on the average of 4,000 calories a day. She usually ate two meals a day which is an interesting habit of most stout people. She cooked her vegetables with fat meat, ate heartily of hot breads, butter, margarine, fried meats, fried or mashed potatoes, rich desserts, coffee with cream and abundant sugar. She seldom ate fruit or green vegetables but ate between meals, and consumed up to six bottles of soft drinks in a day. Since these were not considered eating, specific questioning was necessary to elicit total caloric intake. In November 1944, this diet cost about $.75 a day.

Now in the management of this patient several factors seem to be of importance.

*Read in the Symposium on Therapy, sponsored by Department of Continuation Education, Medical College of Virginia, Richmond, February 18, 1947.

*Miss Marguerite L. Pettee, Chief Nutritionist, Medical College of Virginia Clinics, collaborated with me in this series of case studies.

In the first place the doctor wastes his time and the patient his or her money unless the patient actually wishes to lose weight. It is this lack of cooperation that spells failure in the management of many cases of obesity. We found that those who visited their physician regularly every two weeks lost weight more rapidly than those who came at greater or more irregular intervals.

The resolution, if possible, of any psychological quirk was essential. This should be explained to the patient fully and occasionally psychiatric aid is necessary. Any stout person, who eats to satisfy a craving which he or she cannot otherwise gratify, will not cooperate until this feature has been eliminated. Obesity and maladjustment form a vicious circle which must be broken. Persistence is necessary for no habit, with the possible exception of alcohol or drug addiction, is harder to break.

Obviously diet, diet, diet, is the key to weight reduction, and any other method is but chasing therapeutic butterflies. The diet should include one gm. of protein per kilo optimum weight, adequate vitamin and mineral intake. We have learned that it is better to prescribe a standard breakfast and supper or lunch, and permit the patient to eat unrestrainedly of 5 per cent fruits and vegetables and lean meats for the third meal. The standard breakfast consists of one egg or one lamb chop or two slices of bacon, one slice of toast with half a pat of butter, one cup of coffee without sugar or cream, and one small glass of milk; and the standard supper of one egg, one slice of whole wheat toast, and one helping of a 5 per cent fruit. Nothing but water is allowed between meals. One multivitamin capsule daily is given for maintenance. This diet amounts to around 1,000 to 1,250 calories a day. Three and a half pounds of weight is the maximum rate of reduction per week which is considered wise. If the patient conscientiously follows this diet, he will lose weight and in several weeks he finds his appetite less voracious and more readily satisfied. When this occurs the battle is half won.

In passing, it is appropriate to mention a few pseudoscientific methods of weight reduction which have been foisted on the public. Jad salts were supposed to be added to bath water to dissolve away the fat. The most ingenious nostrum was the gold capsule containing a tapeworm egg, which escaped in the stomach through a gelatin window after it had been swallowed. This sold for $10.00. I have recently seen a patient who attended a reducing course in a nationally known cosmetic parlor in New York. Here she was regimented for a period of two weeks by a diet chiefly of orange juice and mineral oil together with strenuous gymnasium exercise. She lost 15 pounds but quickly regained it after leaving the school.

Most proprietary reducing tablets contain thyroid and/or phenobarbital and benzedrine, and are sold with the impression that taking these pills makes dieting unnecessary. A well known grape juice company advertises the reducing benefits which accrue from using their product. Florida and California have their fadists who advocate everything from beet to sauerkraut juice in elaborately planned daily regimens. In a recent Richmond newspaper there appeared an advertisement for a nationally known bread with this astonishing headline, " 'Melt' Fat Off By the Pound. 'Burn Off' Excess Fat On This Proved Medical Principle. No Starving! No Drugs! No Violent Exercise!" The body of the article then goes on to say, "You follow the scientific principle proved by doctors that to reduce safely (avoid acidosis) you must get at least a pound of carbohydrates—which provides 'the flame fat burns in'—for every pound of fat you burn off." The bread is also advertised to contain Vitamin B-1 which, according to the ad, is the one science has found necessary to help transform the carbohydrates in bread into "the flame fat burns in". Alas, the poor fat lady is besieged by as many bogus panaceas as is the alcoholic and usually with as ineffective results.

What about exercise? Sadly enough for most obese patients, we know that exercise contributes little to reducing. To work off one pound of fat it is necessary to expend 4,320 calories of energy. In practical terms this means such absurdities as walking 66½ miles, playing pingpong for 17½ hours, dancing, i.e., foxtrot for 16 hours, sawing wood for 10½ hours, and finally walking to the top of the Washington monument 48 times. Obviously exercise plays a very minor role and in stout persons, whose cardiovascular system is already overloaded, may be a very hazardous pursuit.

What about drugs? Thyroid extract is mentioned only to be condemned except of course when used in the treatment of hypothyroidism associated with obesity, and this association as we have previously stated is rare. Thyroid in nontoxic doses may increase an already pathologic appetite. Obviously in

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toxic doses it is dangerous to the cardiovascular and nervous systems.

Amphetamine, either in the form of benzedrine sulphate or dexedrine sulphate, in doses of from 5 to 10 mgm., 30 minutes before meals, has a definitely depressing effect on the appetite and in addition favorably affects the mood and sense of well being of the patient. Dexedrine is probably the choice as its sympathetic stimulation is less marked. Patients cooperate much better if they are given a crutch in the form of a tablet to take than if they must rely on an unsatisfying diet alone. Atropine, in the form of the tincture of belladonna, one hour before meals, may also retard the appetite.

Certain gels, such as metamucil, mucilose, or mucara, given in one or two dram doses before meals, fill the stomach by their expanding bulk and not only assuage the appetite but aid in the control of constipation.

To reduce water retention which may impede weight loss, at certain times in the course of reducing, aminophylline in 3 grain doses before meals, ammonium chloride, 15 grains before meals, are helpful. They also tend to reduce the appetite. Occasionally the mercurial diuretics are helpful.

It must be borne in mind, however, that drugs without dietary management are valueless.

We have attempted to mention briefly exploded theories of obesity, true concepts of its etiology, and we hope we have at least focused attention to the best methods of management.

BIBLIOGRAPHY

1. Newburgh, L. H.: Obesity, *Archives of Internal Medicine*, **70**:1033-1096, 1942.
2. Pelner, Louis: The Treatment of Obesity by Appetite Control: The Use of Autonomic Substances and Their Synergists, *Annals of Internal Medicine*, **22**:201-212, 1945.
3. Rose, Mary Swartz, "Foundations of Nutrition", New York, Macmillan Company, 1938.

Estimate Men Responsible for Barren Marriages in 30-50 Per Cent of Cases.

It is estimated that between 10 and 15 per cent of adult marriages are barren. In these the male is either a contributory or sole cause in 30 to 50 per cent of the cases, according to two San Francisco doctors writing in the July 12 issue of *The Journal of the American Medical Association.*

Lewis Michelson, M.D., Assistant Clinical Professor of Obstetrics and Gynecology at the Stanford University School of Medicine and Robin Michelson, M.D., studied a group of 855 barren marriages of which 519 husbands were found to have impaired fertility.

In 287 of the couples the physicians collected adequate data to analyze the relative fertility of husband and wife. They state that "this study offers a challenge to physicians, in that of these 287 ccuples there were 99, or approximately 34 per cent, in which both husband and wife were apparently fertile, as far as could be determined (in the present state of medical knowledge), and still no pregnancy occurred."

The physicians point out "that either husband or wife may be the sole cause or both may have minor defects the combination of which is sufficient to prevent conception. Consequently, one must not be satisfied with the finding of defects in one partner, but both husband and wife should be completely examined before an opinion is expressed as to the factors causing the infertility and the possibility of altering them."

"War or No War, Depression or No Depression,"—

Depression or no depression, in good times and in bad, Mead Johnson & Company are keeping the faith with the medical profession. Mead Products are not advertised to the public. If you approve this policy, Please specify *Mead's.*

THE DIAGNOSIS AND TREATMENT OF HERNIATED NUCLEUS PULPOSUS*

J. L. THOMSON, M.D.,
Norfolk, Virginia.

In recent years the entire concept of lumbago and sciatica has been changed because of a better knowledge concerning the anatomic and pathologic relationships of the intervertebral disc and intraspinal portion of the peripheral nerves in the lower lumbar region. Before the work of Barr and Mixter in 1937, sciatica had been treated as a severe type of rheumatism and inflammation of the sciatic nerve which sooner or later would improve of itself only to recur at intervals for many years. However, these writers showed that there was definite cause for the greater number of cases of sciatica, by demonstrating the anatomic relationship of the intervertebral disc and peripheral nerves as they leave the dura in the lower portion of the spine. We now speak of the symptom of sciatica as rupture of the annulus fibrosus with herniation of the nucleus pulposus, specifying the interspace at which the pathologic change has occurred. It would still be incorrect to state that all types of sciatica are caused by a herniated nucleus pulposus because it is well known that other lesions, such as pelvic tumors in the female, prostatic tumors in the male, cauda equina tumors, sciatic injury, peripheral sciatic tumors, and various types of inflammatory diseases and toxic conditions all cause sciatic pain. Therefore a careful history, physical and neurological examination are required for an accurate diagnosis of herniated nucleus pulposus.

To understand this syndrome clearly it is important to review the anatomy of the lower spine, and its relationship with lumbo-sacral plexus. An intervertebral disc is present at each interspace from the second cervical vertebra to the first sacral, making twenty-three discs in all. The disc consists of a cartilaginous portion which is contiguous with the bony surface of the vertebra above and below, in the center of which is the nucleus pulposus. A fibrous-like layer of tissue lying in strands, known as the annulus fibrosus, acts as a band around the cartilaginous plate enclosing the nucleus pulposus. The latter structure is a remnant of the notochord and lies somewhat closer to the posterior border of the disc. It consists of white fibro-elastic material, about 80 per cent water and, when displaced into the vertebral canal, has the gross appearance of crab meat. The posterior longitudinal ligament thins out considerably along its lateral border which accounts for the fact that the herniated nuclei are most frequently found beneath the lateral fibers where it offers the least resistance to the protruding material. The roots of the cauda equina float freely in the subarachnoid space except where the emerging root leaves the dura laterally at the middle of the body of the vertebra above and descends in a separate dural covering downward to make its exit from the canal at the interspace below. So each root is firmly fixed as it leaves the dura and cannot be displaced by the protruding mass without causing symptoms as can the roots of the subarachnoid space. The emerging root lies close to the upper border of the intervertebral foramen and therefore above the disc. Consequently, a posterior protruding nucleus pulposus will not affect the nerve leaving the same interspace but will make pressure on the nerve in the spinal canal that emerges from the next interspace below. As a rule the protruding material is large enough to make some pressure on the most lateral nerve fibers still in the subarachnoid space which will make up the second emerging root below. Therefore, a herniated nucleus pulposus at the fourth lumbar interspace will involve L_5 and S_1 roots, whereas a similar lesion at the fifth lumbar interspace will involve S_1 and S_2 roots. Due to the fact that the lower portion of the lumbar spine is much more mobile than other portions of the spine and because of the lordotic curve of the lower lumbar region, 96 per cent of cases of herniated nuclei occur between the fourth or fifth lumbar interspaces.

Low back pain per se has only recently been satisfactorily explained and is due to disturbance of the rich sensory network entering the annulus fibrosus. Roofe has shown histologically that sensory fibers come from just distal to a posterior root ganglion to re-enter the canal and travel downward two or three interspaces supplying the annulus fibrosus and posterior longitudinal ligament along the

*Read at the meeting of the Medical Society of Virginia at Virginia Beach, October 14-16, 1946.

way. Therefore, it is possible for low back pain to result from tearing of the annulus fibrosus, severing the sensory network, causing back pain only when the nucleus pulposus has not extruded through the tear in the annulus fibrosus. This accounts for the fact that the greater number of patients complain of low back pain for days or weeks before the onset of sciatica. With the foregoing facts clearly established, the clinical features of a herniated nucleus pulposus may be discussed.

A carefully recorded history alone is often sufficient to make a correct diagnosis and at times may even localize the interspace involved. Approximately 60 per cent of patients give a history of various types of back trauma, although this may be nothing more than twisting the back. Frequently the severe low back pain comes on suddenly while the patient is stooping over in the process of lifting an object and may be so severe that he is unable to stand erect for many days. A recent case—low back pain began while the patient was bending over a wash basin and suddenly sneezed. Many patients will give a history of several attacks occurring over periods of weeks or months with intervals of relief, only to have recurrence of pain more severe than the last. During an episode of pain, comfort is usually obtained by lying in bed with the involved leg flexed at both the hip and the knee. The most intense pain may be in the sciatic notch, thigh, popliteal space, calf, ankle or foot. Weakness is not a common complaint. Usually the patient confuses weakness with severe pain, which prevents normal motion. Paresthesias of coldness, numbness, tingling or lightning-like sensation are associated with pain and are of much greater diagnostic importance than the localization of pain. If straining, sneezing, coughing, or sudden twists of the back aggravate the paresthesia and pain a herniated nucleus pulpopus is very probable.

Inspection of the spine often reveals loss of normal lordotic curve and palpation shows marked spasm of the erector spinae muscles. Listing of the affected side takes place in order to shift the weight of the spine from the involved area. Not infrequently a tender area over the spinous process at the level of the involved vertebra is found on palpation. Positive jugular compression sign is added proof of encroachment on a nerve root. The test consists of bilateral compression of the jugular veins which may cause an accentuation of sciatic pain by the increased spinal fluid pressure pushing on and displacing the involved nerve root. The test is performed by having the patient stand erect and compressing the jugular veins just above the clavicles by encircling the neck with the hands or by placing a blood pressure cuff about the neck and raising the pressure in the apparatus to 40 mms. of mercury. If the test is positive the patient will complain of pain or paresthesia in the involved extremity and a negative test should not be accepted until the jugular veins have been compressed for two minutes. Finally, the most common finding is the positive Lasègue sign produced by flexing the thigh at right angles on the trunk and extending the leg on the thigh until intense pain results. Then by dorsiflexing the foot in this position, added pain is complained of because of further stretching of the sciatic nerve. Straight leg raising of the affected extremity exaggerates the pain by increasing the pull on the sciatic nerve. Frequently the same pain may be caused by only suddenly dorsiflexing the foot on that side.

It is of great help in the examination if the patient can outline the area of numbness and tingling along the calf and foot. This numbness is confined to the anterolateral aspect of the leg and great toe when the lesion is located at the fourth lumbar interspace or along the posterolateral aspect of the leg and dorsum of the foot and toes, sparing the big toe when the fifth lumbar interspace is involved. The ankle jerk is usually diminished or absent in the fifth lumbar interspace lesion and preserved when the lesion is above the level. This is the only reflex change found in an average case unless the knee jerk is altered in a 3rd interspace lesion.

Whereas in the early years of treating these cases a lumbar puncture was routinely performed as an aid to diagnosis, the procedure is now rarely done. This is because the greater number of verified cases show a total protein of less than 40 mg. per cent and is of no diagnostic help. Therefore in the typical case the patient is spared the anxiety of submitting to the test.

Since it is possible to make the diagnosis from the history and neurological examination in the greater portion of cases and accurately localize the lesion, it is only infrequently necessary to resort to contrast media injection into the spinal subarachnoid space. A filling defect of the opaque column at an interspace is not always conclusive evidence that a

herniated nucleus pulposus is present, because adhesions about the arachnoid in the cauda equina or deforming arthritis cause considerable confusion. When lipiodol or pantopaque is necessary for localization, only two to four cubic centimeters should be injected into the lumbar subarachnoid space. Larger quantities seem unnecessary and, if lipiodol is allowed to remain, may cause complaint of a heavy, pulling, or dull aching sensation at the tip of the coccyx which lasts for several weeks or months, or result in arachnoidal inflammation if pantopaque isn't removed. Most neurological surgeons feel that small amounts of either may remain in the canal without doing harm. However, it must be remembered that the material remaining in the spinal canal after a considerable interval, on fluoroscopic examination, may be seen along the nerve sleeves of the lower lumbar nerves actually outside the spinal canal. It is hard for a layman or even physician not accustomed to its use to believe that this material so diffusely scattered does not cause considerable harm to the patient. So a diligent effort should be made to withdraw all of the media at the conclusion of the x-ray examination.

The operative procedure for removal of herniated nucleus pulposus can be carried out under the anesthesia preferred by the surgeon. The anesthesia of choice is either spinal or local supplemented with intravenous pentothal sodium if needed. The operation consists of a small, well localized hemilaminectomy not disturbing the spinous processes, with removal of only a small portion of the laminae above and below the interspace. The ligamentum flavum is dissected from the bone and the epidural fat is removed, exposing the dura. A swollen nerve root displaced posteriorly is first evidence of an underlying herniated nucleus pulposus. The nerve and dura are retracted medially, exposing the smooth, glistening protruded tumor mass. A wide stellate incision made through the posterior longitudinal ligament over the mass generally allows it to extrude and the crab-meat-like material can be removed with gentle traction and manipulation. This allows the nerve to fall back in its normal position. Approximately 10 per cent of herniations occur at both the fourth and fifth interspace and in some clinics each space is explored routinely. Occasionally the herniation may occur more toward the central portion of the canal and then it may be necessary to convert the hemilaminectomy into a total laminectomy in order to remove the herniated nucleus either through a transdural incision or extradurally by completely displacing the dura toward the opposite side. The anterior and lateral vertebral veins occasionally cause troublesome bleeding, but may be controlled by electrocoagulation or small pieces of muscle or gel foam preparation. The wound is closed in layers with interrupted black silk without drainage. Often the patient is completely relieved of pain on recovering from the anesthesia. There usually is no trouble in voiding voluntarily following operation. Abdominal distension is seldom troublesome but, if it should exist, prostigmin should be given hypodermically. A general diet is usually well tolerated by the second post-operative day. Frequent movement of the legs and turning in bed is encouraged to prevent phlebitis and atelectasis, particularly in the older patients. The patient is allowed to sit up on the seventh to the tenth post-operative day, then walk, and may be discharged on the tenth to the twelfth day without any type of back support, as a rule. There is no cause for a weakened back following operation when the procedure is limited to a partial hemilaminectomy. Nor should a back fusion be done routinely, but this operation should be reserved for the small percentage of patients who do not derive complete relief from removal of the nucleus pulposus.

405 Wainwright Building.

DISCUSSION

DR. J. M. MEREDITH, Richmond: Dr. Thomson has explained very thoroughly the symptom-complex of herniated nucleus pulposus, and there is really nothing of importance to add to his presentation. There are some other points in the diagnosis of these herniated disks which sometimes puzzle us. I think the overall picture is that of an individual whose pain is both low in the back and down the posterior and lateral aspects of the leg to the foot or ankle. When we get an individual with those symptoms we should think of herniated nucleus pulposus.

We should take some time to examine these patients in the erect position. When you find a definite lordosis of the patient's lumbar spine, protruded disk is unlikely. Most of these patients have flat backs or lumbar scoliosis.

Dr. Thomson would, I think, if he had had time, have described cervical protruded disks as a condition causing pain in the arm and hand, either to the little-finger side or to the thumb. This is treated in like fashion; namely, the removal of the disk by hemilaminectomy.

Sometimes the reflexes show some changes. The practical surgical point is that when the pain is largely in

the ankle and in the foot we invariably today look at both the fourth and fifth lumbar interspaces; and if the patient has definite pain in the anterior thigh, with diminution in the knee jerk, then it is incumbent upon the surgeon also to look at the third lumbar interspace, which prolongs the operation slightly.

It is necessary to take X-rays of the lower spine in all these cases. One must be certain that metastatic disease is not present.

The recurrence rate is very low; certainly not more than one or two per cent to the degree that operation again is required. More rarely still it recurs in the opposite leg. Personally I recall only one or two that I have seen that had pain in the other leg requiring operation at a later date.

It is well, perhaps, to realize the extent of time involved when these patients are operated upon—the time away from work. We usually tell them that they will remain in bed two weeks and be ambulatory for another three weeks. They usually must plan to remain away from work five or six weeks.

The operation is not so formidable as it was a few years ago. A small amount of bone is removed, and the disk is extracted extradurally without weakening of the spine.

Just a word about the end results, because after all it is that in which we are all primarily interested now. It was just about 12 years ago, I believe, that this syndrome was first elucidated by Mixter and Barr, in Boston, as the cause of sciatica in a large number of cases. It is possible we have all been expecting a little too much from the procedure. It is not one hundred per cent curative by any means; but when we recall that up to about 1934 these patients with backache and sciatica were treated by a variety of other methods, sometimes with satisfactory results and sometimes with indifferent results, I think that today, when the offending lesion is actually removed, our overall results are much better.

In conclusion, there have been three recent surveys made, of military cases and cases in private civilian practice, each series involving several hundred cases. About fifty per cent of these individuals who are operated upon consider themselves cured—just as well as before the pain developed—and are back at their former work; others are doing light work only.

The fusion operation is reserved for the great minority of cases; from three to twelve per cent are fused in various clinics because of related spondylolisthesis or other orthopedic lesion. It adds somewhat to the operation, and certainly the time in hospital is prolonged. I think that fusion today is reserved largely for the cases in which the orthopedist who follows or first sees the case thinks fusion should be done.

Postgraduate Course in Diseases of the Chest.

The American College of Chest Physicians is sponsoring a second annual postgraduate course in diseases of the chest to be held during the week of September 15-20, at the Municipal Tuberculosis Sanitarium, Chicago, Illinois.

The emphasis in this course will be placed on the newer developments in all aspects of diagnosis and treatment of diseases of the chest. The course will be limited to 30 physicians. Tuition fee is $50.00.

Further information may be secured at the office of the American College of Chest Physicians, 509 North Dearborn Street, Chicago 10, Illinois.

Combination of Drugs Effective for Ulcerative Colitis.

Patients with chronic ulcerative colitis, an infectious disease of the large intestine, were effectively treated with penicillin taken by mouth and an intestinal sulfonamide, phthalylsulfathiazole, according to Michael H. Streicher, M.D., of Chicago.

Writing in the May 24 issue of *The Journal of the American Medical Association,* Dr. Streicher, who is assistant professor of medicine, University of Illinois College of Medicine, treated 45 patients with this disease.

The author points out that the combination of drugs was very effective because such infectious agents as the staphylococcus, which is responsible for boils, and the streptococcus, which causes "strep" throat, are present in the intestines in ulcerative colitis.

Some factors which predispose to invasion by the organism causing this disease have come to be recognized. The most common of these infections of the upper part of the respiratory tract, including tonsillitis, cranial sinusitis, bronchitis and pneumonia.

THE MASKING OF SYPHILIS BY PENICILLIN
Report of a Case

JAMES M. SUTER, M.D., M.P.H.,
Health Officer, Smyth-Washington-Bristol Health District,
Abingdon, Virginia.

Penicillin, today, is being widely used for the treatment of both gonorrhea and syphilis. As a result of the effectiveness of penicillin on both the gonococcus and the Treponema pallida, the accurate diagnosis of early syphilis has been complicated. When a double infection is acquired at the same exposure, and this occurs in about 1.4 per cent in males and 3 per cent in females,[1] there is a great possibility that the syphilis symptomatology will be masked by the treatment of gonorrhea. The incubation period of gonorrhea is from two to five days while the incubation period of syphilis averages about twenty-one days, but can be as short as ten or as long as ninety days. Thus, it can be easily seen that administration of 300,000 u of penicillin in oil and beeswax for gonorrhea could easily mask the obvious (primary and secondary) symptoms of syphilis and send the case into a period of latency with no external manifestations. This was early recognized by several writers.[2] Later experience, as shown by Romansky,[3] that 300,000 u of penicillin in oil and beeswax will render a primary lesion of syphilis free of all Treponema helped confirm this. This has been further confirmed in the work in the Venereal Disease Clinic, Abingdon, Virginia. Recently, two cases of primary syphilis, proven by positive darkfield examination, were each given 300,000 u of penicillin in oil and beeswax and subsequent darkfield examinations, after twenty-four hours, were all negative.

In a recent letter to all physicians,[4] the Syphilis Committee of the Medical Society of Virginia recommended that, after 1cc of penicillin in oil and beeswax, patients be placed on observation status with instructions to return on the third, seventh and twenty-first past treatment days. It also further recommended that these patients be given a serologic test on the twenty-first, sixtieth and ninetieth days after treatment to detect coincident syphilis that might have been acquired in the same sexual exposure.

In an article in the *Journal of Venereal Disease Information,* July 1946, Fromer et al. further confirm the work of Leifer and Martin that the occurrence of fever, chills and malaise which develops during the course of therapy of gonorrhea is strongly indicative of a dual infection.

Presented herewith is a case, recently diagnosed in the Venereal Disease Clinic, Marion, Virginia. It is believed that in this case there was a dual infection and that the syphilitic manifestations were masked by the treatment of the obvious gonorrheal infection.

CASE 1. L.M.P. W.M.27

Chief Complaint: Moderately profuse urethral discharge, several days' duration, May 1946. Patient was given 100,000 units sodium penicillin, 20,000 u q.3.h. The patient stated that while he was being treated he felt slightly flushed and later had feelings of chilliness. The symptoms were not severe, but the patient had been perfectly well up to time of disease and felt well after course of penicillin. Repeated blood smears were negative for malaria. Several Standard Tests for Syphilis were done, one at time of infection and one thirty days later; both were negative. However, sixty days later, the blood was strongly positive on repeated tests. No primary or secondary lesions had been noticed. Spinal fluid at this time was negative.

CONCLUSIONS

1. Further evidence is presented that the occurrence of chills, fever and malaise while treating gonorrhea with penicillin in oil and beeswax may indicate a concurrent syphilitic infection, which will enter a period of early latency, and will show no primary or secondary manifestations.
2. All cases of gonorrhea treated with penicillin in oil and beeswax should be adequately followed up to eliminate the possibility of a concurrent syphilitic infection, particularly, if chills, fever and malaise are noted.

BIBLIOGRAPHY

1. Kemp, J. E., and Shaw, C.: The Role of Acute Gonorrheal Urethritis in Masking the Lesions of Early Syphilis, *Amer. Jour. Syphil. and Ven. Dis.* **20**:56, January, 1936.

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2. (a) Leifer, Major Wm., and Martin, Capt. Samuel P.: Effect of Penicillin on Course of Early Syphilis, *J.A.M.A.* **130**:4 (January 26), 1946.
2. (b) Ricchiutti, J. F.: Penicillin Therapy in Gonorrhea with Associated Undiagnosed Early Syphilis, *U. S. Naval Med. Bull.* **43**:1031 (November) 1944.
3. Romansky, M. J., and Rein, C. R.: Treatment of Early Syphilis with Calcium Penicillin—Oil-Beeswax, *J.A.M.A.* **132**:847 (December 7), 1946.
4. Memorandum to all Physicians from L. J. Roper, M. D., State Health Commissioner; Subject, Free Distribution of Penicillin In Oil and Beeswax.

Hospital and Health Facilities May Be Expanded With Federal Aid.

Under the appropriations act signed by the President on July 8, Thomas Parran, Surgeon General, U. S. Public Health Service, Federal Security Agency, announced that construction of 225 million dollars' worth of hospital and health facilities during the fiscal year of 1948, ending June 30 next year will be possible. Although no Federal funds were directly appropriated for this purpose, Dr. Parran says the act sets up a procedure, patterned after the program of Federal aid for highway construction, which obligates the Federal government to pay up to $75,000,000 as its share of approved hospital construction. Since the Federal government pays one-third of the cost, this brings the potential combined total of Federal, State and local funds to $225,000,000. Under this arrangement, States need not delay their hospital construction plans since they have the assurance that any construction project approved by the Surgeon General creates a contractual obligation on the part of the Federal government to meet its one-third share of the cost.

This legislation implements the construction phase of the Hospital Survey and Construction Act passed by Congress last year, authorizing the appropriation of three million dollars for survey and planning and 75 million dollars for construction annually for five years. Two and a quarter million dollars was appropriated last year to assist the States in surveying existing hospital facilities. The 75 million dollars just appropriated for the fiscal year 1948 is the first money to be made available for construction. Funds may be used for health centers, laboratories, clinics and other medical facilities, as well as for hospitals.

All States and territories, including the District of Columbia, are conducting inventories of their hospitals and health facilities. So far three State construction plans have been approved and it is expected that more than half of the States will have submitted their plans by fall. The States whose plans have been approved are Indiana, Mississippi and North Carolina.

New Books,

Recently received by the Library of the Medical College of Virginia, available to our readers under usual library rules are:

Buchsbaum—Methods of tissue culture in vitro.
Cecil—A textbook of medicine. 7th ed.
Christian—Osler's principles and practice of medicine. 16th ed.
Clayton—Electrotherapy with direct and low frequency currents.
Horner—Dental education today.
Jordan—Textbook of histology. 8th ed.
Lemon and Ferrance—Analytical and experimental physics.
Lund *et al*—Bioelectric fields and growth.
McIntyre—Curare: Its history, nature and clinical use.
Pijoan—A handbook of commonly used drugs.
Planck—Treatise on thermodynamics.
Schiff—Differential diagnosis of jaundice.
Tassman—The eye manifestation of internal disease.
Whyte—The next development in man.
Wolf and Wolf—Fungi.
Yearbook of neurology, psychiatry and neurosurgery—1946.

AN INTERNATIONAL DRAMA*

JOHN BELL WILLIAMS,
Richmond, Virginia.

For about twenty minutes, now, let us pretend that we have just entered a theatre where every seat is filled with anxious people. The lights overhead are gradually dimmed as the curtain slowly rises on:

ACT I

The first scene carries us to Italy toward the close of the eighteenth century. The first character—a lady, the wife of a professor—is busy in her husband's laboratory among a number of students who are working with an old-time electrical machine. She is ill, and is herself ruefully skinning frogs which she has condemned to make into soup and take as medicine, frogs being the fashionable substitute at that stage of the medical sciences for codliver oil. Of a sudden she sees the legs of one of her frogs begin a rapturous dance. Naturally, she is astonished and desires an explanation of the performance. The students consider that it is sufficiently well accounted for by the pure cussedness normally inherent in frogs, but this theory does not satisfy the lady. Impelled by what we call in men a love of knowledge and in women female curiosity, she relates the circumstance to her husband, a man of science, and engages his interest in the solution of the mystery. The lady is Madame Galvani, and she makes a discovery which is to transform the world, for she sees the birth of dynamic electricity.

Thus she becomes the first intellectual being for whom Nature had deigned to unveil this phase of her deeper mysteries; and all unknowing that in the twitching limbs of that humble frog lay the promise and the potency of the telegraph, the telephone, the dynamo, the trolley car, the electric lamp, and the other mighty wonders which electricity has wrought.

ACT II

As the curtain rises for Act II we find ourselves in Merrie England. A man named Crookes holds the stage. He charms the audience by producing a magical glow within the interior of a tube. But he is not a magician; he is deadly serious, and attributes the glow, not to what is vaguely called electric light, as the audience thought, but to matter itself—to a bombardment of the glass by minute particles rushing against it at an enormous speed. His views are much disputed by other actors, but he stands his ground and insists that they are not solid, nor liquid, nor gaseous, and do not consist of atoms. Now enters Sir Oliver Lodge. He defends Mr. Crookes by going even further in proclaiming that they "consist of something much smaller than the atom—fragments of matter, ultra-atomic corpuscles, very much smaller, very much lighter than atoms, things which appear to be the foundation stones of which atoms are composed."

The phenomena of the Crookes' tube are then repeated and discussed. The spectators are flooded with the x-rays which stream from the tube, but no one knows this. They are excited to see what is going on inside the tube, but it does not occur to them that something might be happening on the outside as well. Lenard, a German, then takes a hand. He exhibits rays which pass through certain opaque objects, but he is one of the set of scientific prigs which glorifies abstract science and snarls at its practical applications, and which thinks that the man, who prints an algebraic rigmarole to elucidate some futile but hidden property of steam, is far more deserving than the man who invents a steam engine and puts it to work. He expounds his observations. They are noted by his brethren as to their bearing on various theories and speculations, but that they could be utilized to locate a bullet in the depths of the body is an idea too practical for them to entertain. The curtain falls upon animated but serious thought.

ACT III

Act III is staged in the year 1895, in Germany, where Professor Roentgen independently demonstrates the same facts. Working with a Crookes' tube and using a peculiarly prepared screen, he exhibits genuine sleight of hand by showing the audience the bones of his own hand through the flesh. He next subjects his pocketbook to the same strange rays. This "brings down the house" for through the leather they see money. Then, indeed, the overwhelming magnitude of his magic bursts upon them, for to hit upon a contrivance capable

*Read before the Section on History, Richmond Academy of Medicine, March 11, 1947.

of revealing cash in a college professor's pocketbook is clearly an achievement, the importance of which is of the very first magnitude. The curtain falls amid great applause.

ACT IV

Act IV is laid in France. Becquerel, a French actor, is on the stage. He is working with uranium and demonstrates that it emits rays having characters much like those of the rays coming from the Crookes' tube. He proves this by placing a piece of uranium together with an object and a photographic plate in perfect darkness and then exhibits an image of the object on the plate.

At this point the spotlight is thrown on a native of Poland—Madame Curie. With excited interest she sees that different specimens of uranium vary much in their photographic and electrical activities, and conceives the idea that the active substance is not uranium itself, but something associated with it. This idea she works out at great cost, with manual and mental labor inexpressible, and at last this self-denying, persevering, and learned woman is rewarded with the discovery of a new element with characters so strange, and apparently so greatly at variance with principles long believed to have been established as to make the audience stare and gasp.

INTERMISSION

The curtain falls. An extremely long intermission follows as the scientific world discusses the remarkable romance of the play and demonstrations throughout the universe make it an international affair.

In the first place, it was considered that, in speaking of the characteristics of radium, they were not entirely accurate. When the term *radium* was used, such use, unless they were obviously precise in their language, was provisional and for convenience, and they were in fact speaking of the bromide of radium or of some analogous salt of the metal. These salts in the ordinary physical and chemical relations, the workers found closely resembled the corresponding salts of barium, but they also possessed properties that were unique.

They detected in the radiations shot out by radium three kinds of rays which they named alpha, beta, and gamma. The alpha and beta rays were actual particles of matter; the gamma rays were not matter but were attributable to waves in the ether analogous to the waves by which the phenomena of light was customarily explained, and was apparently our familiar x-rays. The particles constituting the alpha rays differed from the particles constituting the beta rays in their size, which was greatly larger; in their velocity, which was much slower; in the ability to pass through obstacles, which was far less, and in their electrical state, which was positive. The extremely minute, rapidly moving, penetrating, and negatively charged beta particles were, in fact, identical with the cathode stream in the Crookes' tube.

In addition to its radiations, they discovered that radium emitted a kind of vapor called its emanation, but which seemed to be compounded of several emanations, each having its peculiarities. Perhaps a satisfying notion of the state of the case was obtained by comparing the emanation to the vapor which rose from hot water, and the radiations to the rays of heat which the water gave off.

By means of its emanations radium communicated some of its properties to neighboring objects, an effect called induced radio-activity.

In order to convey a distinct idea of the peculiarities of radium they knew of no better way than to regard radium as a bit of the active sun substance itself. Its analogy to the sun was indeed very close, for it generated and emitted light, heat, and electricity; it photographed and affected the skin and subjacent tissues of the human body with a kind of sunburn. Some of its capacities, for instance, its ability to produce x-ray effects, were not directly observable in the sunbeam, yet all of them could, by indirect methods, be derived from it. But, especially, radium was found to do all these things apparently without outside help, creating its own energy, ever burning, never consuming—like the sun.

Instances of bodies capable of exhibiting one or another of most of these characteristics were sufficiently numerous. But hitherto, in all cases, the sequence of cause and effect had been clearly evident and there was no infraction of the principle of the conservation of energy, which asserts that energy must be begged, borrowed, or stolen, but cannot be created.

The intermission continues. Some of the performances of radium, while of profound interest from the standpoint of science, were found to be of a nature not suitable for the stage. Noted early was its continuous manufacture of heat, persistently keeping itself about four or five degrees Fahrenheit

hotter than its surroundings, which exploit it performed without fuel, without undergoing any change of composition, and without consuming itself—spontaneously, that is. The quantity of heat which it perpetually evolved in this strange manner was truly surprising. It was enough to enable the radium to melt considerably more than its own weight of ice each hour, and to do this hour after hour and day after day without perceptible loss of its own substance. A yet more striking idea of this capability was given by comparing it with a combustible substance. Thus, a pound of coal in burning set free energy sufficient to raise one pound vertically about 2,000 miles, but a pound of radium, without burning, but spontaneously manufactured energy sufficient to raise one pound about 2,400 million miles; and it was calculated that 15 pounds of radium was capable of keeping a one-horse-power engine continuously at work for several centuries.

On its physiological side they noted that, when it acted on the brain and spinal cord of certain animals, paralysis and death ensued, and that when its emanations were breathed by small animals the animals were killed, and the body of an animal thus killed, became radioactive and could impress a photographic plate. Radium affected plant life also, turned the leaves yellow and withered them, but, while it impeded the development of microbes, it did not do so very actively.

As radium spontaneously charged itself with heat, so it was able to charge itself with electricity; and was the first example of a body which possessed this power. Madame Curie and her husband observed that a specimen which had been enclosed in a glass vessel had accumulated enough electricity to rupture the glass, exhibit a spark, and give a shock.

ACT V

Act V opens with the stage darkened. There follows a very gruesome, sort of ghostly display with radium causing a curious glow of fluorescence or phosphorescence in a large number of substances. In some respects it is very beautiful and impressive. Among the substances used are the salts of the alkaline and alkaline-earth metals, paper, cotton, glass, zinc sulphide, and several other minerals. A very striking display of this ghostly attribute was observed when, bearing a fragment of radium bromide, the actors passed in nocturnal procession by a row of minerals and saw many of the minerals do salutation to the kingly element by lighting their fires at its approach.

The stage is then lightened. Radium is also shown to produce a number of spectacular chemical effects. These are changes of color in the bodies on which it acts. Thus, under its influence glass becomes brown or violet colored, and white salts of the alkaline metals turn blue, green, yellow, or brown. Paper is scorched and rendered brittle, and is, besides, pierced with perforations. Yellow phosphorus is changed into the red variety, and the oxygen of the air into ozone. Water is decomposed into its constituent gases, while radium emanations change the color of diamond and crystallize diamond itself into graphite.

Like the rabbit in the hat, the most astonishing feat of the act is radium's ability to disappear! Radium emanations are sealed up in a tube, and, when examined, helium is there—the radium is gone!

ACT VI

The curtain rises for Act VI. The year is 1905; the place—a crowded amphitheatre in the old, the original, the unrestored, Egyptian building of the Medical College of Virginia. The sole actor is Dr. William H. Taylor,* physician, Confederate soldier, teacher, coroner, naturalist, chemist, and, not being a specialist, he also knows many other things, including physics. He delivers a long, fascinating and scholarly lecture on radium.

The paper I have just read was taken from this ten-thousand-word lecture of Dr. Taylor—by selecting and piecing together portions, using his exact words, and condensing them into a two-thousand-word play for your diversion.

To be sure that the facts were brought up to date, I requested Dr. John W. Moore, a physicist now teaching at the Medical College of Virginia, to go over this sketch for the purpose of comparing Dr. Taylor's statements with modern knowledge. The kind cooperation of Dr. Moore resulted in only one change. He pointed out that Dr. Taylor, in discussing the heat that radium evolves, stated that this goes on and on without "perceptible" loss of its own substance, and that his lecture could be brought up to date by merely changing the word "perceptible" to "appreciable"!

Dr. Moore added this comment: "Only in recent

*De Quibus, by Wm. H. Taylor—Bell Book and Stationery Co., Richmond, Va.

times has it become clear that energy alone is not conserved but that mass-energy is conserved. This was shown by Einstein in his famous equation relating mass and energy: "Energy equals Mass (Velocity of light) squared." Thus, according to Dr. Moore, "radium actually uses up a tiny amount of its mass and gives off corresponding high energy emanations." To further quote Dr. Moore, "The analogy between radium and the sun still holds since the above process also takes place in the sun."

ACT VII

Scene 1

For Scene 1 of Act VII we return to Germany. The world is at war. A woman, Dr. Lise Meitner, is driven out of the country by Hitler, and in great irony she brings to America useful secrets regarding uranium and the development of the atomic bomb.

Scene 2

Scene 2 of this final act is hemispherical. The stage itself seems to disappear! The concussion of a mushroom blast resounds around the world from Hiroshima. The people are in a daze, staggering between a sharpened intellectual vision and utter darkness. And there the world stands today.

EPILOGUE

In summarizing Dr. Taylor's paper we are struck with four outstanding features:

First, the vast amount of accurate knowledge Dr. Taylor acquired between 1898, when radium was discovered, and 1905, when he delivered this lecture.

Second, that men of so long ago in passing through a museum saw, as he said, metals saluting radium by lighting their fires at its approach.

Third, that they predicted the split of the atom—to quote Dr. Taylor's words, "breaking it into a multiple of fragments."

And fourth, the readiness with which this newly acquired knowledge of radium was harnessed for good instead of for evil use. And now that the prophecies implied in Dr. Taylor's lecture have materialized into this so-called Atomic Age, man's ever recurring opportunity for choosing between good and evil has revived that age old conflict on still another plane.

My purpose in presenting you this condensation of such a remarkable lecture by such a remarkable old man is with the hope that it may inspire a modern Dr. Taylor to add new luster to Richmond's illustrious past.

McGuire Clinic, St. Luke's Hospital.

Music In Treatment of Disease.

With the approval of Surgeon General Thomas Parran of the United States Public Health Service, Dr. R. C. Williams, Assistant Surgeon General has accepted appointment as a member of the Board of Directors of the Music Research Foundation, Inc., a non-profit organization which has for its purpose the study of the use of music in the treatment of disease. Dr. Williams will act as Chairman of the Executive Committee of the Board of Directors.

There has been marked interest in the use of music in the treatment of disease for a number of years, and during World War II there was a decided revival of such interest.

It is proposed that a program of scientific inquiry into the therapeutic use of music be initiated. Selected psychiatrists will conduct investigations into the kind of music which has most therapeutic value and the types of mental patient most responsive to its use.

Through the use of fellowships, the Music Research Foundation, Inc., will conduct and initiate special psychological studies. In addition, it will establish grants or fellowships to compile present knowledge of the subject.

The Executive Secretary of the Foundation is located at 2909 Stanton Ave., Silver Spring, Md. Reprints of scientific and general articles on this subject are now available without cost.

THE SIGNING OF DEATH CERTIFICATES UNDER VIRGINIA LAW

HERBERT S. BREYFOGLE, M.D.,
Chief Medical Examiner,
Richmond, Virginia.

Inquiries which have followed the issuing of recommendations by the Office of the Chief Medical Examiner of Virginia[1] regarding the signing of death certificates indicate a general impression that the General Assembly in enacting the 1946 coroner law[2] also revised the laws relating to vital statistics. Unfortunately, such a revision, although needed, was not made. In fact, no essential change has been made in the provisions governing the signing of death certificates since the first enactment of such laws thirty-five years ago. The instructions in question, therefore, out of necessity were based upon the laws of 1912. These statutes are still in force despite the fact that certain of the regulations have out-lived their reason and custom has modified the entire death certifying procedure.

The evolution since 1912 of practices contrary to the provisions of the Virginia Code makes it clear that these early laws either have been overlooked during recent years or intentionally discarded for purely medical reasons.[3] It is also probable that the subject did not receive legislative attention during these intervening years. While at first glance it may appear incongruous to propose a return to an outmoded form of death-certification merely on the basis that it has the advantage of statutory sanction, there are impelling legal considerations that require a strict adherence to such statutes until they are repealed or amended.

These early and now objectionable laws as enacted in 1912[4] carried the stamp of approval of a majority of the medical profession and of state and federal agencies concerned with public health and records. They were written and endorsed in the light of conditions then existing and followed a more or less uniform pattern throughout the nation. They provided that the medical certificate of death should be made and signed by the physician, if any, last in attendance.[5] If there was no physician in attendance, however, the designation of the proper person to sign the certificate would vary, depending upon whether or not the death resulted from "unlawful or suspicious means" and other considerations. Thus, it was stipulated that the registrar, after being notified by the undertaker of a death without medical attendance, should notify the nearest member of the county board of health who then should investigate and certify the death within twenty-four hours. If such member of the board did not do so within the required time, the law specified that the registrar should complete and sign the certificate "from the statement of relatives or other persons having adequate knowledge of the facts." But, if the death, in addition to being one without medical attendance, was found to be due to "unlawful or suspicious means", the law directed that the local registrar should notify the coroner of the death and in such cases only should the coroner complete and sign the certificate.

The act of 1912 made no provision for the certifying of deaths within the cities of the Commonwealth. In 1924 this omission was corrected by amending the act to provide that in the cities of the Commonwealth all such cases of death without medical attendance should be referred to the coroner for immediate investigation and certification.[6] No further change in these statutes was made after 1924 and, as noted preceding, the new coroner law took no account of the vital statistics law as it now stands.

1. General instructions to Coroners, Office of the Chief Medical Examiner of Virginia, Richmond, (June) 1947.

2. Acts of Assembly (Virginia), 1946, Chapter 355, pp. 595-602; 1946 Cumulative Supplement to the Virginia Code of 1942 (annotated), Chapters 72, 112 and 190A.

3. Explicit directions for the signing of death certificates were circulated among funeral directors, physicians and registrars by the State Department of Health shortly after the 1912 law became effective. See the Virginia Health Bulletin, vol. iv., Annual Report, 1912, pp. 145-177.

4. Acts of Assembly (Virginia), 1912, Chapter 181, pp. 440-450. For the background of the first vital statistics law see the Virginia Health Bulletin, vol. iv., Annual Report, 1912.

5. "Medical attendance" has not been defined further by statute or by courts of record. The State Department of Health in 1912 stated: "The law does not contemplate that (physicians) should withhold their signatures when a death occurs in a family which they attend if the cause of death is reasonably sure and above suspicion." The Virginia Health Bulletin, vol. iv., Annual Report, 1912, p. 171.

6. Acts of Assembly (Virginia), 1924, Chapter 334, p. 499.

XUM

Under the vital statistics laws now in force[7] the signing of death certificates must proceed as follows:

Attending physicians: If in attendance at the time of death, the physician[8] must sign the certificate regardless of the cause and manner of death and irrespective of investigation by the coroner. The new coroner law requires that certain deaths[9] be reported to the coroner by the attending physician, but despite this requirement, the vital statistics law gives the coroner no authority to complete and sign the certificate of death at the conclusion of his investigation.

Coroners: In *cities* of the Commonwealth, the coroner is required by law to sign the death certificate in *all* cases where a physician was not in attendance at the time of death.[10] In *counties* the coroner is required to sign the death certificate only when the death is referred to him by the local registrar as one resulting from "unlawful or suspicious means" and no physician was in attendance, both conditions concerning medical attendance and means of death being present. It should be noted, however, that under the new coroner law the coroner is required to investigate and take charge of the body in all deaths where no physician was in attendance, but his duty with respect to the signing of the death certificate depends upon other considerations not included in the new law, but which are covered by the vital statistics law.[11]

County registrars and members of the county health boards: In all other county deaths without medical attendance not referable to the coroner for the signing of the certificate as noted preceding, the nearest member of the county health board must investigate and certify the death within twenty-four hours, but if he does not, the registrar is authorized to complete and sign the certificate upon "the statement of relatives or other persons having adequate knowledge of the facts." The coroner under the 1946 coroner law, however, must investigate the death *regardless* of who signs the certificate of death.

Provisional certificates: The Acts of Assembly for 1922 added a section to the vital statistics laws providing that "if for good reason the doctor's or coroner's certificate of death, or that of the person acting as coroner, cannot be obtained, the . . . undertaker shall file with the local registrar a provisional certificate of death upon which the registrar shall issue a burial-transit permit.[12] The 1912 vital statistics act also made exception of "sparsely settled districts" designated by the local board of health, allowing burial without permit in such areas and merely stipulating that the certificate should be filed within ten days.[13] The State Department of Health in the same year, however, indicated its view that this provision would "seldom have to be invoked."[14]

In the case of deaths required by law to be investigated by the coroner,[15] regardless of the proper source of the signature appearing on the death certificate, funeral directors are at the present time prohibited by law from embalming or cremating a body until the permission of the coroner is obtained.[16] This provision in its effect eliminates the possibility of burial without permit as contemplated by the preceding sections of the vital statistics law, except in those deaths where an attending physician certifies that death was due to "natural causes".

Penalties: Included among the laws of 1912 and 1924 which have been carried forward into the Code of 1942 in connection with the signing of death certificates are provisions for penalties upon physicians who (1) refuse or neglect to complete certificates when required by law to do so (conviction carries

7. Virginia Code of 1942 (annotated), Chapter 66, Sections 1565, 1570, 1580 and 1581. These sections essentially are the laws of 1912; see notes 4 and 6 *supra* and note 12 *infra*.

8. The term "physician" means any person licensed to practice medicine, homeopathy, osteopathy, chiropractic, naturopathy or chiropody. 1946 Cumulative Supplement to the Virginia Code of 1942 (annotated), Chapter 68. See note 5 *supra* regarding "medical attendance". Stillbirths attended by midwives under Virginia law are deaths without medical attendance.

9. Deaths (1) by violence, (2) suddenly, of a person in apparent health, (3) in prison, and (4) by suspicious, unusual, or unnatural means. Acts of Assembly (Virginia) 1946, Chapter 355, section 4806-i; 1946 Cumulative Supplement to the Virginia Code of 1942, Chapter 190A, section 4818 (9).

10. See note 5 *supra*.

11. It is important to note that where the death is merely one without medical attendance the primary purpose of the investigation by the coroner is not the completing of the death certificate, but the collecting of evidence in broad terms of public interest. In those cases where the coroner is authorized to complete the certificate after his investigation this is only an incidental and subordinate duty.

12. Acts of Assembly, (Virginia) 1922, Chapter 441, pp. 767-768.

13. Note 4 *supra*. Virginia Code of 1942 (annotated), Chapter 66, section 1565.

14. The Virginia Health Bulletin, vol. iv., Annual Report, 1912, p. 219.

15. See note 9 *supra*. Coroners are required by law to be notified also of any deaths without medical attendance.

16. Acts of Assembly (Virginia), 1946, Chapter 355, section 1727; 1946 Cumulative Supplement to the Virginia Code of 1942 (annotated), Chapter 72, section 1727.

a penalty of not less than $5 nor more than $50, or (2) who file a false certificate of death (conviction carries a penalty of not less than $50 nor more than $200).[17]

The procedure thus required under the Commonwealth's thirty-five year old vital statistics law has been modified by custom to allow the coroner to complete and sign a certificate of death in any case where it is his duty to investigate the cause and manner of death. Attending physicians frequently assume that it is the duty of the physician in such cases to refuse to sign the certificate and insist that the coroner certify deaths by accident, suicide, homicide or those in which the exact cause of death is unknown or in which an element of suspicion appears. In some instances disputes concerning the *cause* rather than the *manner* of death have led to the practice of supposing erroneously that the law makes it a duty of the coroner to determine the *exact* cause of death for the primary purpose of recording adequate vital statistics. County registrars naturally have shown an increasing reluctance to intrude themselves into the purely medical field and members of county boards of health advance the view that there is no purpose in the practice of duplicating a coroner's investigation.

Such custom now has the advantage of being an established practice of much merit, and while the law it violates is susceptible to criticism from many viewpoints, both medical and non-medical, the fact remains that the coroner does not have the legal duty or authority to certify every death which he is required to investigate. A certificate of death, when signed by the proper person as required by law, is a legal document of many uses, and is submissible in evidence in a court of record as *prima facie* proof of the facts stated therein.[18] When the coroner completes and signs the death certificate where it is not within the scope of his duty and authority to do so, such a document is worthless from a legal viewpoint and ultimately hinders the proper administration of justice.

From a medical point of view this may be interpreted as a purely legalistic approach. Admittedly, registrars of vital statistics today are at a distinct disadvantage in complying with the medical requirements of the 1912 law; attending physicians are not likely to extend their inquiry into unlawful, unnatural or suspicious deaths in the degree contemplated by attorneys, police or coroners. Yet, a death certificate must be satisfactory as judged by *legal* as well as *medical* standards. If existing laws make it probable that such a document will be objectionable and controversial from either point of view, efforts should be made to coordinate the interests of the medical and legal profession in remedial legislation.

17. Virginia Code of 1942 (annotated), Chapter 66, section 1581.

18. 93 A.L.R. 1342; 159 A. L. R. 171; Cooley, R. W., Briefs of the Law of Insurance, ed. 2, vol. 6, pp. 5466-5468, 5477-5478; Couch, G. J., Cyclopedia of Insurance Law, vol. 8, section 2200, p. 7111 ff., sections 2225-2229, p. 7213 ff.; Virginia Code of 1942 (annotated) Chapter 66, section 1580; Richardson, O., and Breyfogle, H. S. Medico-legal Problems, Ann. Int. Med. 25: 22-66, 1946. Concerning the admissibility of death certificates and all of the statements contained therein, see 17 A. L. R. 1454; 96 A. L. R. 325; Couch *op. cit. supra*, vol. 8, p. 7232.

Floral Eponym (53)

GOMESA

BERNARDINO ANTONIO GOMES, 1769-1824

This Lisbon surgeon was born in Arcos in 1769, the son of a doctor. He studied in Coimbra, becoming a doctor of medicine in 1793. In 1797 he went as a naval surgeon to Brazil where he became engaged in botanical and pharmacological studies.

He introduced vaccination into Portugal and was also interested in, and wrote treatises on typhus fever and elephantiasis. Gomes died in Lisbon January 13, 1824.

Gomesa are Brazilian tree-perching orchids, little known in cultivation.

XUM

THE FORUM

The Family Doctor.

In the last several years much has been expressed in lay as well as professional circles regarding the preservation of the family doctor. Recent issues of *The Journal of the American Medical Association* have concerned themselves with this subject, and it has been discussed in many of the local societies. The American Medical Association unofficially lent its support to a study of this problem, and at the San Francisco convention in 1946 sponsored a get-together of a group of men interested in general practice.

During the recent American Medical Association Convention in Atlantic City, results of the San Francisco meeting became evidenced on the evening of June 10th when a meeting was held of those men interested in the formation of a society of general practitioners. At this meeting, a constitution was offered which had been drawn by Dr. Stanley R. Truman, Chairman of a Committee appointed by the San Francisco group. This constitution was accepted by the men there present, and the American Academy of General Practice came into being.

Article II of the constitution of this academy states the objects and purposes of the academy as "1. To promote and maintain high standards of the general practice of medicine and surgery. 2. Encourage and assist in providing postgraduate study for general practitioners in medicine and surgery, and to encourage and assist practicing physicians and surgeons to participate in such training; 3. To encourage and assist young men and women to prepare, qualify and establish themselves in general practice. 4. To protect the right of the general practitioner to engage in medical and surgical procedures for which he is qualified by training and experience; 5. To advance medical science and private and public health."

Membership in the Academy is open to any physician of high moral and professional character who is a graduate of a medical school approved by the American Medical Association. He must be duly licensed to practice in the State in which he practices and must be a member of the local medical association of the area in which he practices. It is further required that he will have had at least one year of rotating internship at an acceptable hospital or the equivalent in postgraduate training. Further, he must have been engaged in general practice for at least three years immediately preceding his application for membership and must have shown interest in continuing his medical advancement by engaging in some postgraduate activities during the said three year period. It is provided that membership will lapse at the end of three years and that in order to be eligible for re-election to membership, the practitioner must present evidence of his high moral and professional character and must have spent a minimum 150 hours during this three year period in postgraduate training of a nature acceptable to the membership committee.

At the organizational meeting in Atlantic City, applications were accepted from those men present who qualified, and a House of Delegates selected from the members there present, in so far as that was possible. Officers were elected and likewise a Board of Directors. Dr. Paul A. Davis of Akron, Ohio was elected President of the American Academy of General Practice and Dr. Stanley R. Truman, 1904 Franklin Street, Oakland 12, California was elected secretary. By virtue of their attendance at the organizational meeting, the Virginia members of the House of Delegates for the organizational year are Dr. C. P. Jones, Jr., Newport News, and Dr. John O. Boyd, Jr., of Roanoke.

The constitution and by-laws of the Academy anticipate the establishment of State Divisions of this Academy. It was determined from questioning those members present that there are now existing nine such State Academies which will become divisions of the American Academy, and it is hoped a similar division may be organized in the State of Virginia. At the state society meeting in Roanoke in October, registrations in general practice will be accepted, and a meeting of those so registering will be scheduled for the organization of a Virginia Division if interest warrants. At that meeting, constitution, etc., will be read in detail and any questions answered.

Any men interested in joining the American Academy of General Practice may obtain application blanks from either Dr. Jones or Dr. Boyd. Applications must be presented on a form which has been accepted by the American Academy and accompanied by a check in the amount of $25.00, $10.00 being initiation fee and $15.00 dues. It

should be clearly understood that this Academy is in no way connected with the American Medical Association or the Medical Society of Virginia. It is an organization of status similar to the American College of Physicians and the American College of Surgeons—it is not an American Board.

Resolution With Regard to Anesthesiology.

The Board of Directors of the American Society of Anesthesiologists, at a meeting held in Atlantic City, N. J., June 11, adopted the following resolution, to be publicized as widely as possible:

WHEREAS, the development and furtherance of modern Anesthesiology is of great importance to the welfare of patients and

WHEREAS, Anesthesiology is a component part of the practice of medicine:

NOW THEREFORE BE IT RESOLVED: That the American Society of Anesthesiologists, Inc., recommends strongly

A. The establishment of departments of Anesthesiology in all medical schools and hospitals under the direction of a doctor of medicine actively engaged in the practice of Anesthesiology.

B. That the department of Anesthesiology shall bear the same relationship to the medical school and/or hospital as is borne by other medical departments of the institution.

AND BE IT FURTHER RESOLVED: That The American Society of Anesthesiologists, Inc., disapproves

A. Of the training of persons other than doctors of medicine in the science and art of anesthesia, for the assumption of responsibility in the care of patients where it may be necessary to exercise medical judgment, and particularly does it disapprove of the issuance of certificates for such training by its members.

B. The existence of departments of Anesthesiology in hospitals and/or medical schools under the direction of persons other than doctors of medicine or under the nominal direction of doctors of medicine not actively engaged in the practice of Anesthesiology.

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President—MRS. J. E. HAMNER, Petersburg
President-Elect—MRS. J. L. DECORMIS, Accomac
Recording Secretary—MRS. M. H. HARRIS, West Point
Corresponding Secretary,
MRS. MEADE EDMUNDS, Petersburg
Treasurer—MRS. REUBEN SIMMS, Richmond
Editorial Chairman—MRS. E. HOLLAND TROWER, Eastville

Annual Meeting.

The annual meeting of the Woman's Auxiliary to the Medical Society of Virginia will be held on Tuesday, October 14th, at Hotel Roanoke, Roanoke.

Mrs. T. Allen Kirk of that city has consented to be Chairman of Local Arrangements. She and her committees and the wives of the physicians in Roanoke wish to make the convention a happy and successful one.

It is hoped that there will be a full attendance of members of the Board of Directors, County Presidents, Presidents-elect, officers, chairmen, delegates and visitors.

Northampton-Accomac Auxiliary.

The Woman's Auxiliary to the Northampton-Accomac Medical Societies held its annual summer picnic and outing on July 8th, as guests of its president, Mrs. B. N. Mears, at her attractive new cottage, "Driftwood", at Silver Beach.

A delicious luncheon was followed by a social hour which was greatly enjoyed by members and guests.

CATHERINE R. TROWER, (MRS. HOLLAND)
Chairman, Press and Publicity.

Richmond Academy of Medicine Auxiliary.

Dr. L. Benjamin Sheppard was the guest speaker at the April meeting of the Auxiliary to the Richmond Academy of Medicine. He showed a movie on "The Y. M. C. A. Youth Fund Drive". Mrs. Ed Bryce, luncheon hostess, was assisted by Mrs. W. F. Cavedo and Mrs. E. M. La Prade.

MYRTLE G. MORTON (MRS. W. R.),
Publicity Chairman.

XUM

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for June, 1947, as compared with the same month in 1946, and for the period of January through June 1947, compared with the same pericd in 1946, is as follows:

	June 1947	June 1946	Jan.-June 1947	Jan.-June 1946
Typhoid and Paratyphoid	11	11	42	38
Diarrhea and Dysentery	865	448	2,676	1,171
Measles	933	2,397	7,007	12,228
Scarlet Fever	60	206	820	1,952
Diphtheria	12	26	137	225
Poliomyelitis	4	0	18	9
Meningitis	9	16	64	150
Undulant Fever	4	9	30	28
Rocky Mountain Spotted Fever	13	21	20	29
Tularemia	3	5	31	34

THERAPY IN ROCKY MOUNTAIN SPOTTED FEVER

The public health department is concerned with disease prevention primarily, but the concern and interest must be extended whenever possible to facilitate early recovery and to prevent complications and fatality. From the point of view of prevalence, Rocky Mountain Spotted Fever is of lesser public health significance than many other communicable diseases. The total reported cases in Virginia during 1945 and 1946 exceeded that of all other states, and yet the attack rate was less than 1 in 30,000 population. However, the case fatality rate has been greater than 20 per cent, the clinical picture generally severe, complications frequently develop and convalescence is prolonged. It is therefore considered important and of timely interest to review the more recent advances in specific and general treatment.

Recent investigation has shown that the acute case of spotted fever may develop serious deficiencies in fluid, chloride or protein levels. In addition, toxic capillary damage resulting in hemorrhage, and this with depression of blood forming organs, may result in problems of secondary anemia. Most cases of this disease require hospitalization in order that the utmost in medical and nursing facilities be available in meeting these clinical problems, and in the use of specific therapy the hospital laboratory may provide important and essential services. It may be possible to maintain adequate fluid, chloride and protein levels orally or by gastric gavage; otherwise, fluid and chloride requirements must be met through subcutaneous and intravenous use of normal saline and Ringer's solution. In the event of shock, or as indicated, glucose may be added. Repeated injections of plasma may be necessary to meet need in protein deficiencies and to combat shock. Transfusion with whole blood may also be required. Emphasis upon vitamin therapy is recommended, including A, B-Complex, C, D, and K.

A hyper immune rabbit serum has been developed for the specific treatment of spotted fever. This biological appears to have met with considerable success when used by the third day of eruption. Its use is somewhat limited to those with negative allergic history to rabbit and who do not react to sensitization tests. The serum is injected intramuscularly and treatment may be repeated if indicated, and if no important allergic reaction occurs. This preparation is expensive, must be used early in the disease and may sensitize the patient.

Numerous satisfactory clinical reports may be found in recent literature following therapy with para-aminobenzoic acid. This compound appears naturally in foods such as grains, liver and yeast, and is part of the Vitamin B-Complex. Large doses are usually well tolerated, with reaction or complication seldom appearing. Leukopenia, acidosis, abdominal swelling and delirium may follow treatment and must be watched for. Para-aminobenzoic acid is also known as P.A.B.A. and is available in the acid and alkaline tablet (sodium). If the former is used, for each gram of P.A.B.A., 10 cc. of a 5 per cent sodium bicarbonate solution is recommended to avoid acidosis. Dosage will vary from 0.5 to 1.0 grams of medication per pound of body weight per day. Because of rapid kidney excretion, P.A.B.A. is advised at two hour intervals. Blood concentrations of from 30 to 60 milligrams per cent are advised, and this should be estimated each day. White cell counts on a daily basis are also necessary and if depression occurs to 3,000 cells, medication should be modified or stopped.

In addition to specific therapy, supportive and symptomatic therapy are important. Careful supervision of each case is recommended to avoid complications and fatality.

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BOOK ANNOUNCEMENTS

A Survey of Facilities for the Care and Treatment of Alcoholism in New York City. By The Committee on Public Health Relations of The New York Academy of Medicine. Reprinted from *Quarterly Journal of Studies on Alcohol*, New Haven, Conn., Vol. 7, No. 3, pp. 405-438, December 1946. individual copies 20 cents; fifty or more 15 cents each.

The Research Council on Problems of Alcohol suggested in 1944 that the Committee on Public Health Relations of the New York Academy of Medicine undertake a survey of the available facilities for the treatment of alcoholics in Greater New York. This thirty-five page pamphlet is the result of that survey. It makes interesting reading. New York is one of the few cities in the United States in which the treatment of alcoholism is regarded as a hospital problem and not primarily a police problem. The police rarely make an arrest for drunkenness. Nevertheless, alcoholism is indifferently treated unless there are complications. Sixty percent of New York physicians do not treat alcoholics and in the hospitals the common drunk is regarded as a nuisance. Only one voluntary hospital—the Knickerbocker—takes kindly to the treatment of these patients. This hospital has eighteen beds available to patients sponsored by Alcoholics Anonymous.

The Committee stresses the need for research in this field and recommends that there be a plan in a university-affiliated hospital to provide a teaching service for medical students and to render a public service to alcoholics and their families.

This report also gives a list of social agencies concerned with the problems and some account of their activities.

M. P. R.

Fundamentals of Clinical Neurology. By H. HOUSTON MERRITT, M. D., Professor of Clinical Neurology, College of Physicians and Surgeons, Columbia University; Chief of Division of Neuropsychiatry, The Montefiore Hospital. FRED A. METTLER, M. D., Ph. D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University. And TRACY JACKSON PUTNAM, M. D., Professor of Neurology and Neurological Surgery, College of Physicians and Surgeons, Columbia University. Philadelphia, The Blakiston Company, 1947. x-289 pages. Illustrated. Cloth. Price $6.00.

This volume has been prepared by its authors as a guide to the general practitioner to assist him in diagnostic problems which he may encounter with reference to the nervous system in his daily practice. The book is divided into two parts. The first deals with the basic techniques of the neurological examination. Although the description of these techniques is brief, the reader is provided with clear and adequate directions for the correct performance of neurological tests and the differentiation of normal from abnormal responses. Since the volume is intended for general practitioners, all special or controversial matter has been rejected and only accepted procedures are given. The techniques outlined correspond in general with those in use at the Montefiore Hospital and the Neurological Institute of New York. Illustrative forms for recording neurological examinations are included in the text.

The second part of the book describes the basic anatomical arrangements within the nervous system and something of the principles underlying their function with the view of permitting significant interpretations and evaluations of the findings of the neurological examination. Through this sound approach, the authors proceed to discuss most of the commonly encountered disorders of the nervous system. Brief reference is made to treatment but there is no discussion of special diagnostic techniques requiring surgical intervention. However, one chapter is devoted to the evaluation of cerebrospinal fluid findings in various diseases.

While the authors do not offer this book as a text designed to qualify the specialist in neurology, it is believed that the work will not only find a useful place on the desk of the general practitioner of medicine but will also be valuable to younger neurologists as a concise, lucid and authoritative source of information on the fundamental principles of neurology.

The text is written in clear, easily readable style and is beautifully illustrated with clinical photographs, microphotographs and roentgenograms portraying the characteristic features of various nervous diseases. There is also a profusion of well-executed drawings depicting the gross and finer structure of the nervous system and its connections, and a number of useful tables and graphs summarizing anatomical and clinical data.

E. C. HOFF.

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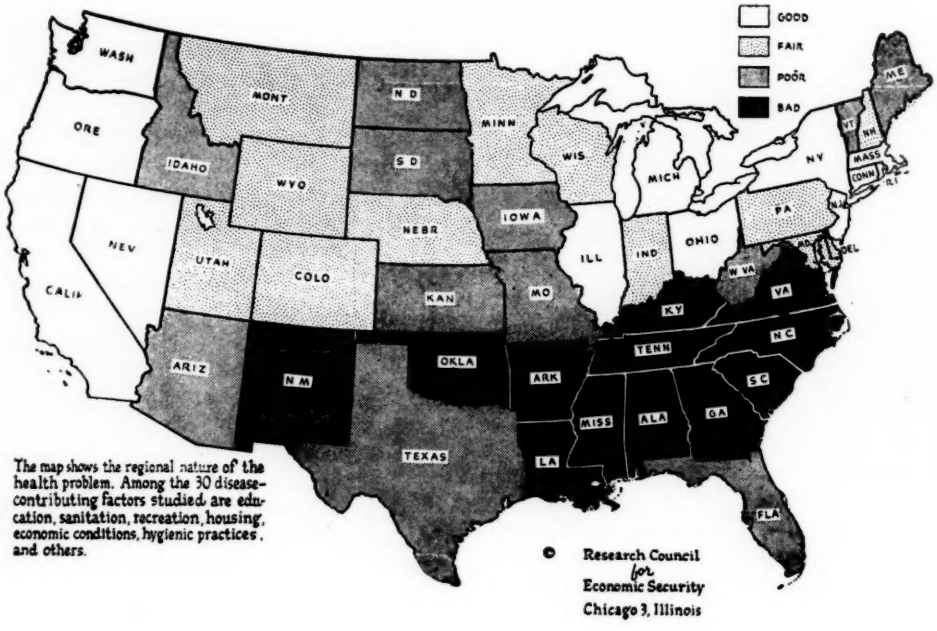
EDITORIALS

Our National Health Problem



The map shows the regional nature of the health problem. Among the 30 disease-contributing factors studied are education, sanitation, recreation, housing, economic conditions, hygienic practices, and others.

Draft Rejections

DRAFT rejections is a poor index of health conditions because so many variables entered into the picture. In the first place, the standards set by the Military varied from time to time. In the second place, many things, hernia for instance, that rendered one unfit for military duty are compatible with health in civilian life. The cause of the greatest number of rejections was illiteracy and the second largest number of rejections were for muscular and bony defects, neither of which are health problems. Nevertheless, it is interesting to see how Virginia ranked among the states in this regard. Forty-one per cent of registrants examined February 1943 through August 1943 were rejected. The figure for the entire nation was 30.8 per cent. Seven states, Alabama, Arkansas, Florida, Georgia, Louisiana, North Carolina and South Carolina had higher percentages of rejections than did Virginia. It is significant that these states also had high percentages of illiteracy. The coefficient of correlation between percentage of rejectees and percentage of illiteracy in the various states is $+0.759$. The probable error is $\pm.042$. The coefficient of correlation is $15\frac{1}{2}$ times the probable error and is therefore highly significant statistically. It is worth noting also that not one of seven states with a higher percentage of draft rejections had a non-white population of less than 24 per cent.

The Centennial Meeting of the American Medical Association

THE ninety-sixth annual session which marks a hundred years of the American Medical Association was indeed an inspiration. We were reminded of the unbelievable advances in medicine in general and particularly in American medicine that have occurred in the past one hundred years and were inspired by the thought of what the next one hundred years had in store for us. For instance, Sir Howard Florey told us of the innumerable moulds, mushrooms, actinomycoses and spore bearing bacteria, all possible sources of penicillin and streptomycin-like substances. There are some 2,000 species of moulds alone. He showed long lists of substances that had already been isolated and for one reason or another had been found useless from a therapeutic standpoint. He predicted an antidote for every pathogenic bacterium and virus. We were told of the advances in diagnosis and therapy with radioactive products, which, of course, are only in their infancy. That we were at the end of the era of infectious diseases and the beginning of the era of the degenerative diseases seemed to be commonly understood. The discovery of the cause and the cure of cancer was said to be just around the corner and that in the future increasing knowledge of genetics and foods would make old age both comfortable and profitable.

Sunday morning, on our way to Atlantic City, we heard the program that was broadcast from the Convention Hall. It consisted of three sermons, one by a Catholic priest, one by a Jewish rabbi, and one by a Presbyterian minister. In substance we were told that physicians who cooperate internationally in the use of scientific advances to prolong life and prevent suffering should teach the world the ways of peace and happiness. We arrived at Atlantic City in time for the conference of Presidents and Other Officers of State Medical Associations. The conference was in reality a symposium on the extension of medical care. The speakers were three prominent citizens of Cincinnati. Dr. Howard Schriver, president-elect of the Conference of Presidents, spoke on the Medical Profession's Programs to Improve Medical Care; Major General Hawley spoke on the Medical Profession's Cooperation with the Veterans Administration; and Senator Taft spoke on Health Legislation in Congress.

Atlantic City was in gala attire—strings of colored lights across the boardwalk and groups of flags on each lamp post and the shops had welcome signs in their windows. The post-office department issued a special commemorative stamp—a copy of Sir Luke Feldes' painting "The Doctor", representing Queen Victoria's personal physician on an all-night vigil with a gardener's child who was ill with pneumonia. Incidentally, the child recovered. The stamps were put on sale for the first time in the Convention Hall and for two days there was a long line at the stamp window. Cancelled stamps bearing the date June 9, 1947, sold on the boardwalk for twenty cents.

The Ballroom of the Convention Hall, where the general meetings were held, the Westminster Hall of the Chelsea Hotel, where the section on Obstetrics and Gynecology met, were always crowded. At the general meeting on Tuesday evening, some sixty or more delegates from foreign countries were presented and were awarded honorary fellowships in the Association. Henry Christian, an outstanding Virginian and a graduate of Randolph-Macon College, was awarded the Distinguished Service Medal. A medal was given to the retiring president, H. H. Shoulders, and to Olin West, the president-elect who resigned on account of ill health. The incoming president, Dr. Edward L. Bortz, made an eloquent address, outlining in a masterly manner the problems that confront the medical profession and painting the future in glowing terms.

The various sections had good programs, but the exhibits, both scientific and commercial, stole the show. They were both better and more numerous than usual and

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were artistically dressed up to suit the gala occasion. Abbott, for instance, had a miniature stage with manakins representing Valentine Mott interviewing a modern surgeon, operating room nurse and nurse supervisor in a modern operating room. They were discussing anesthesia and Dr. Mott emphatically expressed his surprise with his cane. The meat products institutes had figures of an Australian, American, Chinese, and Hindu, in appropriate costumes and relative size and below each statuette were figures showing percentages of protein in the diet, height, weight, and duration of life. The average Australian ate 113.8 gms. of protein, was 5 feet 8 inches tall, weighed 170 pounds and lived 65 years. The average American ate 98.6 gms. of protein, was 5 feet 7½ inches tall, weighed 154 pounds, and lived 64 years. The Chinaman ate only 69.4 gms. of protein of which only 8.5 per cent was of animal origin. He was 5 feet 3 inches tall, weighed 120 pounds, and lived only 30 years. The Hindu ate 61.7 gms. of protein, was 5 feet 4 inches tall, weighed 110 pounds and lived only 27 years.

The scientific exhibits wore one's feet out. They were so fascinating that we kept going in spite of fallen arches and an aching back. They ranged all the way from priceless old books to cleared embryos mounted in transparent plastic. The time to study these exhibits is entirely too short. Some way should be devised for showing at least some of them in various parts of the country, either in regional meetings or at State Society meetings.

The Duty on Gavels

ON the occasion of the centennial celebration of the American Medical Association, the delegates from the British Medical Association presented to the House of Delegates a gavel and a block made from the wood of a mulberry tree that had grown in Tavistock Square, now site of the home of the British Medical Association, but formerly occupied by the home of Charles Dickens. It was under this tree that he wrote many of his great novels. Before the British doctors could bring this token of good will between two great medical associations, they had to pay Uncle Sam four dollars duty. This is the first time that we have heard of a monetary value being put on a gavel. Hitherto our conception of the duty of a gavel was to punctuate the proceedings of meetings. Sometimes these are of great historical importance and sometimes they are mere routine affairs. Gavels vary greatly in size. From the noise they make over the air, those used in political conventions must be of tremendous size. Those used in medical meetings are more modest in size.

Some gavels have great sentimental value to begin with and some acquire a sentimental value through the years. A little gavel that we have the honor of wielding once a month was made from an olive three that grew on the Mount of Olives. It was presented to Centenary Methodist Church by the Reverend J. N. Latham. Another gavel whose custody we had for a few days last June was made from the door knob of the office of Ephraim McDowell. It was presented to the American Gynecological Society by Thomas A. Ashby, a Virginian who made his medical reputation in Baltimore. The American Association of Obstetricians, Gynecologists and Abdominal Surgeons has two gavels: one is made from walnut and oak from trees in Danville, Kentucky, that once shaded Ephraim McDowell. The other is newer and is made of mahogany. It was given to the Association, if we remember correctly, some years ago when the older gavel was missing.

The gavel of the Richmond Academy of Medicine was a gift of Dr. R. W. Miller. A detachable silver band bears the name of the president of the Academy. Until

World War II, the band was removed at the end of each year and given to the retiring president. This custom had to be discontinued during the War because of lack of engravers and material.

The Medical Society of Virginia has a gavel made from the door sill of the birthplace of the late Walter Reed. Any one of these gavels could tell a story as interesting as that of the Gold Headed Cane, if there were any Macmichaels around to write down their stories. If the Federal Government gets in the habit of putting a tax on sentimental value, these historic implements may become real financial burdens.

NEWS

Organization of the Virginia Section of the American Academy of General Practice.

In anticipation of the organization of the Virginia Section of the recently organized American Academy of General Practice, arrangements have been made for an organizational meeting during the meeting of the Medical Society of Virginia in Roanoke in October. After going over the program and consulting with the Committee on Arrangements, the best time was felt to be a breakfast meeting at 8:00 o'clock, the morning of October 14th. This breakfast will be held at Hotel Roanoke and it will be necessary that those who desire to attend notify Dr. John O. Boyd, Jr., 820 S. Jefferson St., Roanoke, Virginia, of their intent no later than October 10th.

This meeting will be open to all general practitioners who are members of their local societies and in good standing, whether or not they have joined the American Academy of General Practice prior to the date of the meeting.

Personnel Changes, State Department of Health.

Effective July 1, the Virginia Peninsula Health District was divided into two units—the Elizabeth City-Warwick County Health District with Dr. Thos. F. McGough in charge, with offices at Hilton Village; and the Charles City-James City-New Kent-York District with Dr. Linwood Farley as Health Officer. His headquarters are in Williamsburg. Dr. Farley, who had been health officer of the Augusta County Health District, was succeeded there by Dr. George B. Tyler, recently released from the Navy, who will be located at Staunton.

Fauquier County Medical Society.

At the meeting of this Society in Warrenton on July 17th, the following were elected officers for the coming year: President, Dr. V. L. McCullers, Remington; vice-presidents, Dr. H. L. Townsend, Marshall, and Dr. Walter G. Trow, Warrenton; secretary-treasurer, Dr. J. Frank Folk, Warrenton. At this time, delegate and alternate to the State meeting in Roanoke were also elected.

Buchanan-Dickenson County Medical Society.

At the meeting of this Society held in Grundy on the third Wednesday night in June, Dr. J. S. Shaffer of Grundy Hospital presented a very interesting paper and discussion on Toxicity of Penicillin. He and Dr. C. F. Johnston, also of Grundy Hospital and recently appointed coroner for Buchanan County, were elected to membership. Delegates and alternates to the Roanoke meeting of the State Society were also named at this meeting. Officers of the Society are: Dr. C. F. Reagan, Grundy; president, Dr. J. P. Sutherland, Harman, vice-president; and Dr. T. C. Sutherland, Haysi, secretary-treasurer.

Associated With Dr. Blanton.

Dr. Wyndham B. Blanton, Richmond, announces the association of Dr. Adney K. Sutphin in the practice of Internal Medicine and Allergy, at 828 West Franklin Street, Richmond. Dr. Sutphin graduated from the Medical College of Virginia in 1941 and has served internships and residencies at University Hospital, Charlottesville, Massachusetts General Hospital, Boston, and the Hospital Division of the Medical College of Virginia. He served thirty-four months in the Army, having the rank of captain at time of his discharge.

Dr. John A. Vann,

Of the class of '42, University of Virginia, after several years spent at the Willis Campbell Clinic, Memphis, Tenn., has located in Norfolk, with of-

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fices at 306 Medical Arts Building. He is specializing in orthopedic surgery.

Reappointed on Medical College of Virginia Board.

Nine members of the Board of Visitors of the Medical College of Virginia were reappointed by Governor Tuck in July for four year terms. They are: Lewis G. Larus, Eppa Hunton, IV, and W. H. Schwarzschild of Richmond; Dr. W. W. Wilkinson, LaCrosse; Dr. J. B. Fisher, Midlothian; Dr. Claude B. Bowyer, Stonega; Dr. J. D. Collins, Portsmouth; David H. Harrison, Jr., Hopewell; and G. Tyler Miller, Rappahannock. The Superintendent of Public Instruction is an ex-officio member.

Dr. William Grossmann,

Who has just completed fifteen months as assistant resident on Pediatrics at the University of Virginia Hospital, opened his office at 105-B Marshall Street, Petersburg, July 15, for the practice of Pediatrics. Dr. Grossmann was director of the Bureau of Communicable Diseases of the State Department of Health from 1939 to 1942 when he entered the Service. He was discharged from active duty with the rank of lieutenant colonel in February 1942.

Dr. Frank H. Redwood,

Norfolk, has been reappointed by the Governor as a member of the State Hospital Board for a term of four years, subject to confirmation by the General Assembly.

Dr. Albert R. Gillespie,

Class of '37, University of Virginia, recently of Harrisonburg, has located in Staunton, with offices at Lewis and Frederick Streets, for the practice of ophthalmology and otolaryngology.

Dr. George E. Barksdale,

Richmond, a member of the Medical Society of Virginia and of the American Medical Association, was recently awarded a prize of $250.00, by the American Medical Association Art Society for his painting, the *Death of Jesse Lazear.*

This painting depicts the dying hero who had voluntarily permitted an infected mosquito to bite him, knowing full well the possible consequences, and is shown lying in bed at the close of day on September 25, 1900, where, in the presence of James Carroll and Major Walter Reed, he is coming to the close of a life of sacrifice.

The award was given in this instance as one of several paintings that were exhibited at the meeting of the American Medical Association at Atlantic City in June, and was in competition for the best paintings done by members of the Association on the subject: "Services beyond the call of duty" in military and civilian life.

The painter is a member of several art societies, and has frequently exhibited here and elsewhere, and during the War I was regimental surgeon of Sixth Field Artillery of the First Division of Regulars.

Virginians Attend Dublin Congress.

Dr. Chester D. Bradley of Newport News and Dr. M. Pierce Rucker of Richmond attended the International Congress of Obstetricians and Gynecologists, July 7 to 11, which celebrated the bi-centenary of Rotunda Hospital. This was held at the Royal College of Surgeons in Ireland, in St. Stephen's Green, Dublin. Mrs. Bradley and Mrs. Rucker accompanied their husbands and both couples made the trip by plane.

The Seaboard Medical Association of Virginia and North Carolina

Has selected dates for its annual meeting as December 3, 4 and 5 at The Cavalier, Virginia Beach. Dr. O. R. Yates, Suffolk, is president, and Dr. Clarence Porter Jones, Sr., Newport News, secretary.

Married.

Dr. Charles Henry Patterson of Lynchburg, and Mrs. Marguerita Goodricke-Cattell Young of Auckland, New Zealand, June 18.

Dr. Harold Wayne Ward, class of '35, Medical College of Virginia, and Miss Frances Eileen Gibson, Charleston, W. Va., but now a student in medicine at the Medical College of Virginia, June 28. Dr. Ward is at present a member of the medical staff at the Veterans Hospital, Huntington, W. Va.

Dr. Stuart Hinman Light, Huntington, W. Va., and Miss Jane Constance Maydian of Richmond, June 19. Dr. Light is a member of the class of '47,

Medical College of Virginia, and is interning at Southern Baptist Hospital, New Orleans.

Dr. Marion Lee Rice, Jr., and Miss Virginia Lee Figg, both of Richmond, June 30. Dr. Rice is a member of the class of '44, Medical College of Virginia, and they will make their home in Memphis, Tenn.

Appointments to State Hospitals.

Dr. James B. Pettis, superintendent of Western State Hospital at Staunton, will also act as superintendent of DeJarnette Sanatorium, pending the designation of a successor to Dr. H. P. Newbill, deceased.

Dr. Joseph E. Barrett, State Commissioner of Mental Hygiene and Hospitals, has also appointed Dr. Isaac C. East, formerly with the New Jersey State hospital system, as clinical director of Eastern State Hospital at Williamsburg, and Dr. Hugh Kenneth Moir of Toronto, Canada, as senior physician at Southwestern State Hospital at Marion.

Dr. W. R. Weisiger,

Richmond, was recently elected associate supreme royal patron of the Supreme Council, Order of Amaranth, Inc. He is the first Virginian to have been so honored by the order. He is a thirty-third degree Mason and a member of Virginia Court No. 1 of Richmond.

Motion Picture Films Available.

Believing that professional motion picture films can be of great value in bringing to practitioners and to medical students the advances in medical knowledge, the Academy-International of Medicine has had compiled a list of the films now available, indexed by topics, and including the source from which they may be obtained by the borrower.

As a service to the profession the Academy is offering to mail, upon request, to any members of the Medical Society of Virginia a complimentary copy of the AIM Medical and Surgical Film Catalogue. Requests should be addressed to: Academy-International of Medicine, 214 West Sixth Street, Topeka, Kansas.

Dr. E. G. Gill,

Roanoke, upon invitation extended by the faculty of Duke University, recently served as an associate examiner in ophthalmology for the National Board of Medical Examiners, meeting at Duke University.

Dr. Wilbur M. Bowman

Is back in Petersburg after service in the Army Medical Corps, and has been appointed health officer of that city, succeeding Dr. Mason Romaine, who recently resigned to become director of the division of cancer control of the State Health Department.

Dr. Walter L. Nalls

Has been appointed clinical director of the Veterans Administration Hospital at Oteen, N. C. Dr. Nalls was associated with Dr. Dean Cole of Richmond, prior to entering the Service, but, upon his return, located in Alexandria where he has been practicing for the past year.

The American Congress of Physical Medicine

Will hold its twenty-fifth annual scientific and clinical session September 2-6 inclusive, at the Hotel Radisson, Minneapolis. All sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions, the annual instruction courses will be held September 2-5. These courses will be open to physicians and the therapists registered with the American Registry of Physical Therapy Technicians. For information concerning the convention and the instruction course, address the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

Drs. Rawles and Cherry.

Dr. Benjamin W. Rawles, Jr., announces the association of Dr. Kenneth J. Cherry in the practice of general and gynecological surgery. Their offices are at 807 West Franklin Street, Richmond.

Dr. T. S. Jennings,

Formerly of Waverly, who has been connected with the McGuire Veterans Administration Hospital, Richmond, since August 1946, is now at Newton D. Baker Hospital, Martinsburg, W. Va., as chief of Tuberculosis.

Dr. William A. Sadler,

Class of '44, Medical College of Virginia, recently connected with Buxton Hospital, Newport News, has located for general practice, at Mathews.

Dr. Edmund Horgan,

Formerly of Washington, D. C., where he was engaged in the practice of surgery, was recently

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separated from the Service after having been on duty for more than four years, and has resumed practice as a consulting and operating surgeon, with offices in Winchester.

Schering Appoints Virginian Pharmacist to Field Staff.

Schering Corporation of Bloomfield and Union, New Jersey, manufacturers of endocrine and pharmaceutical preparations for the medical profession, announce the appointment of Mr. Edward B. Kilby, Jr., of Richmond, to the Schering Professional Service staff. Mr. Kilby graduated from Hampden-Sydney College, and also attended the Medical College of Virginia, School of Pharmacy, and has done graduate work at William and Mary College. After four years in the Pacific theatre with the U. S. Army he was employed in his present capacity. He will make his headquarters in Richmond and will be of service to the physicians and pharmacists in Virginia.

Dr. Louis Perlin,

Richmond, announces the removal of his office to 601 Roseneath Road, this city.

Research Fellowships.

The American College of Physicians announces that a limited number of Fellowships in Medicine will be available from July 1, 1948-June 30, 1949. These Fellowships are designed to provide an opportunity for research training either in the basic medical sciences or in the application of these sciences to clinical investigation. They are for the benefit of physicians who are in the early stages of their preparation for a teaching and investigative career in Internal Medicine. Assurance must be provided that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with the facilities necessary for the proper pursuit of his work. The stipend will be from $2,200 to $3,000.

Application forms will be supplied on request to The American College of Physicians, 4200 Pine Street, Philadelphia 4, Pa., and must be submitted in duplicate not later than November 1, 1947. Announcement of the awards will be made as promptly as is possible.

The Virginia Chapter, American College of Chest Physicians,

At its annual meeting held at Pine Camp Hospital, Richmond, the latter part of June, elected Dr. Dean B. Cole of Richmond as president. Dr. C. L. Harrell, Norfolk, was named vice-president, and Dr. Charles W. Scott, Burkeville, secretary-treasurer. About fifty Virginia physicians especially interested in diseases of the chest attended the all day session.

Dr. Baker Goes to West Virginia.

Dr. James P. Baker, Jr., resigned his position as director of the department of continuation education at the Medical College of Virginia, Richmond, effective July 1, to become medical director of the Greenbrier Clinic, White Sulphur Springs, West Virginia. Dr. Baker had been connected with the College faculty since 1934 except for his three years in Service.

Dr. Charles M. Caravati, who has been a member of the department of continuation education of the College, has taken over Dr. Baker's work on a part time basis.

News from Duke University School of Medicine.

Resigning his position as instructor in the Duke University School of Medicine, Dr. E. G. Goodman returned to Wilmington to undertake the practice of internal medicine, allergy and hematology beginning July 1. He has been a member of the Duke Hospital staff since 1940.

Three members of the Duke University School of Medicine faculty have been appointed as expert consultants to the Surgeon General of the War Department. Dr. J. Lamar Callaway, Professor of dermatology and syphilology, serves as consultant in dermatology; Dr. Elbert L. Persons, assistant professor of medicine and director of student health for men, is consultant in medicine; and Dr. Barnes Woodhall, Professor of neuro-surgery, acts in the capacity of consultant in neuro-surgery. The three physicians were employed through the medical consultants division of the office of the Surgeon General and are required to spend one day out of every two week period at Fort Bragg where they conduct clinics, give lectures and make ward rounds.

Drs. R. Burke Suitt, Leslie Hohman and Robert Graves have been appointed to the Mental Hygiene

Committee of the Medical Society of the State of North Carolina, with Dr. A. B. Choate of Charlotte as Chairman. Other members of the Committee are Drs. David Young, Raleigh; Lloyd Thompson, Winston-Salem; J. F. Owen, Raleigh; and H. R. Parker, Greensboro.

Dr. Hugh B. Brown, Jr.,

Lieutenant Colonel in the Medical Corps of the Army and recently stationed in Washington, is being relieved from service the latter part of August and, after a few months in post-graduate study, will return to active work at Draper.

Joins Staff of Southern Medical Association.

Mr. C. P. Loranz, secretary-manager of the Southern Medical Association, announces that Mr. H. L. Williams of Birmingham has joined headquarters staff of the Association. Mr. Williams is well qualified by education for his new position and has worked in Birmingham except for time he served in the Navy, having the rank of lieutenant (jg) at time of his release in 1946.

Dr. G. H. A. Clowes, Ph.D., Sc.D., LL.D.,

Director Emeritus of the Lilly Research Laboratories, was honored by the American Diabetes Association at its recent annual meeting in Atlantic City, New Jersey. He delivered the annual Banting Memorial address and was awarded the Banting Medal which is given in recognition of distinguished service in the field of diabetes.

Under Dr. Clowes' direction, the Lilly Research Laboratories cooperated with the University of Toronto and Drs. Banting and Best in the early development of insulin of sufficient purity and stability to permit its widespread clinical use throughout the world.

The International College of Surgeons,

U. S. Chapter, will hold its twelfth annual assembly and convocation in Chicago, September 28 to October 4, 1947.

The program will include operative and nonoperative clinics, demonstrations, symposia, forums, medical motion pictures, exhibits and the formal dedication of the new library and permanent home of the United States Chapter. All meetings, with the exception of the operative clinics, will be held in the Palmer House and the Stevens Hotel.

Copy of the program and detailed information may be obtained by writing Max Thorek, M.D., Co-chairman, 1516 Lake Shore Drive, Chicago, Illinois.

The American Hospital Association

Will hold its annual convention in St. Louis, September 22-25. "Major Factors Affecting the Hospital Economy" will be the subject for the opening general session on the first evening. Other sessions will be broken into four sections which will convene simultaneously: Professional Practice, Administrative Practice, Hospital Planning and Plant Operation, and Special Aspects of Hospital Administration. A buffet supper and informal gathering in honor of the new president on Monday evening, and a ball and banquet on the last evening have been planned for the social program.

Members of Roanoke Board of Health.

Dr. E. G. Gill has been re-elected chairman of the Board of Health of Roanoke for two years, and Dr. W. R. Whitman has been elected vice-chairman for the same period.

American Board of Obstetrics and Gynecology.

The next written examination (Part I) for all candidates will be held in various cities of the United States and Canada on Friday, February 6, 1948. Applications are now being received for this, the closing date being November 1, 1947. For further information and application blanks, address Paul Titus, M.D., Secretary, 1015 Highland Building, Pittsburgh 6, Pennsylvania.

The American College of Surgeons

Will hold its thirty-third annual Clinical Congress, including the twenty-sixth annual Hospital Standardization Conference, at The Waldorf-Astoria, New York, from September 8 to 12. The five-day program features operative and nonoperative clinics in 38 hospitals in New York and Brooklyn, and scientific sessions in general surgery and the surgical specialties, official meetings, hospital conferences, medical motion pictures, and educational and technical exhibits, at the headquarters hotel. Dr. Howard A. Patterson of New York is Chairman of the Committee on Arrangements; Dr. Frank Glenn is Secretary. Dr. Malcolm T. MacEachern and Dr. Bowman C. Crowell, Chicago, the Associate Directors, are in general charge. Dr. Irvin Abell, Louisville, President of the College will preside.

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The Convocation, at which between five and six hundred initiates will be received into fellowship, will be held on Friday evening, September 12. The new president, Dr. Allen, will confer the fellowships and honorary fellowships. Dr. Andrew C. Ivy of Chicago will give the Fellowship Address.

Dr. Frank F. Thweatt, Jr.,

Senior Surgeon, with the U. S. Public Health Service, has been transferred to Norfolk to have charge of the U. S. Marine Hospital there. He is a native of Petersburg and a graduate in Medicine from the University of Virginia in 1928.

Dr. Rowland H. Walker,

Formerly of Martinsville, has moved to Norfolk and on August 1st opened an office at 310 West York Street, for the practice of Internal Medicine.

For Sale

1 Autoclave
1 Basin Sterilizer
1 Operating Table
1 X-Ray Machine

Suitable for a small hospital or clinic. Address Lebanon General Hospital, Lebanon, Va. (*Adv.*)

Wanted—

A resident or associate in Group practice. Write Dr. A. M. Showalter, Christiansburg, Va. (*Adv.*)

Wanted—

Resident physician, Grade A school. Room, board, uniforms, laundry and $100.00 monthly. Address Miss N. J. Curtis, Superintendent, Sheltering Arms Hospital, 1008 East Clay Street, Richmond 19, Va. (*Adv.*)

For Sale

One (1) operating room table with complete equipment of stainless steel, good as new;

One (1) nitrous oxide oxygen gas outfit, put up by McKesson Appliance Company, model 620.

Address New Altamont Hospital, Christiansburg, Va. (*Adv.*)

Doctor Needed.

Newly remodeled office space available immediately to general practitioner in growing community business district, on second floor of commercial building. Adjacent offices now occupied by dentist, photographer, and fitting salon. Will also make available modern living quarters in nearby residential area. Contact Julian L. Phillips, care Phillips 5-10-to $5.00 Store, Danville, Virginia. (*Adv.*)

OBITUARIES

Dr. Hugh Page Newbill,

Superintendent of DeJarnette Sanatorium at Staunton since the first of the year, was found dead on July 2nd at a cabin in Albemarle County, where he had been vacationing. He had apparently been dead about two weeks and death was believed to be due to an overdose of some drug to produce sleep. Dr. Newbill was thirty-eight years of age and a graduate from the University of Virginia, Department of Medicine, in 1934. Before accepting his appointment in Staunton, he had been assistant professor of psychiatry at his alma mater and was associated with Dr. D. C. Wilson in the operation of the Davis Clinic of the University Hospital. Burial was at Norfolk, his former home. He was a member of the Medical Society of Virginia and of a number of societies pertaining to his specialty. He is survived by his widow and a son and also his parents and a sister.

Dr. Carroll Harris Fowlkes,

Well known ear, nose and throat specialist of Richmond, died July 6, at the home of a sister at Columbia, where he had gone for a short vacation. He was fifty-nine years of age and graduated from the Medical College of Virginia in 1910, following which he interned at Johnston-Willis Hospital, Richmond, and at the Brooklyn Ear and Eye Infirmary. After this, he returned to Richmond and had practiced here except for time spent in service during World War I. He was a member of the Medical Society of Virginia and a number of other professional and civic organizations. His wife died about two years ago but four children survive him.

Dr. James Millard Graybeal,

Eye, ear, nose and throat specialist in Marion for the last seven years, died at his home there on July the 6th. He was seventy years of age and a graduate of the University of Tennessee College of Medicine in 1901. He had practiced his profession for thirty-eight years in Montana, prior to locating at Marion. His wife and a son survive and Dr. A. B. Graybeal of Marion is a brother.

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